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Using vision therapy techniques with visual hygiene and brain-based learning theory to reinforce reading in a private school classroom

Lindsay LeBreton
Pacific University

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Abstract

The purpose of this study is to answer the question: What vision therapy techniques can be successfully implemented into a sixth grade classroom to reinforce and or foster better reading skills? In order to better understand my objective, I approached my research by answering the following sub-questions: 1. What is vision therapy and what background is there within the schools? 2. How are visual deficits found or measured currently in the schools? 3. What is the role of the educator within vision therapy? 4. What visual skills are optometrists improving with different V.T. techniques? 5. How do brain based learning cycles and activities relate to visual hygiene in the classroom? This qualitative research study took place during the 2002-2003 school year. From December, 2003 to June, 2003, 17 sixth grade students were lead through activities surrounding a school-centered vision therapy model. From September, 2002 to June, 2003, a total of 17 students were led through activities surrounding a school centered vision therapy model. There were 15 Caucasian students, 1 student from the Philippines, and 1 Asian-American student that made up our classroom community. Activities ranged from hand-eye coordination activities and saccadic fixations to incorporating and maintaining proper visual hygiene throughout the entire day, including keeping a brainbased classroom environment, and 90 minute learning locks of instruction. The participants, 11 boys and 6 girls, were at varying achievement levels with varied visual skills. Most were athletes, played in the school band and did other extra curricular activities that they were very successful in. Standardized testing puts the majority of the class at or above their grade level for reading at the beginning of the 61 h grade year. By the end of the year, fourteen out of twenty students were at or above the 50th National percentile in their over all reading scores. When broken down into categories thirteen out of twenty, were at/above the 50th National percentile in reading vocabulary and fifteen out of twenty were at or above this range for reading comprehension. The results show moderate improvement in only a short time. Further research would need to be conducted to see if this holds true for a larger population. Given my own experience with both the school related model and the clinical model I have to say that best results are still in the one on one setting where efforts can be modeled and monitored continually.

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USING VISION THERAPY TECHNIQUES WITH VISUAL HYGIENE AND BRAIN-BASED LEARNING THEORY TO REINFORCE READING IN A PRIVATE SCHOOL CLASSROOM

PRESENTED BY:

Lindsay LeBreton

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COMMITTEE MEMBERS:

Jacqueline Waggoner

Anita McClain

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ABSTRACT

The purpose of this study is to answer the question: What vision therapy techniques can be successfully implemented into a sixth grade classroom to reinforce and or foster better reading skills? In order to better understand my objective, I approached my research by answering the following sub-questions:

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This qualitative research study took place during the 2002-2003 school year. From December, 2003 to June, 2003, 17 sixth grade students were lead through activities surrounding a school-centered vision therapy model. From September, 2002 to June, 2003, a total of 17 students were led through activities surrounding a school centered vision therapy model. There were 15 Caucasian students, 1 student from the Philippines, and 1 Asian-American student that made up our classroom community. Activities ranged from hand-eye coordination activities and saccadic fixations to incorporating and maintaining proper visual hygiene throughout the entire day, including keeping a brain-based classroom environment, and 90 minute learning locks of instruction. The participants, 11 boys and 6 girls, were at varying achievement levels with varied visual skills. Most were athletes, played in the school band and did other extra curricular activities that they were very successful in. Standardized testing puts the majority of the

class at or above their grade level for reading at the beginning of the 6th grade year. By the end of the year, fourteen out of twenty students were at or above the 50th National percentile in their over all reading scores. When broken down into categories thirteen out of twenty, were at/above the 50th National percentile in reading vocabulary and fifteen out of twenty were at or above this range for reading comprehension.

The results show moderate improvement in only a short time. Further research would need to be conducted to see if this holds true for a larger population. Given my own experience with both the school related model and the clinical model I have to say that best results are still in the one on one setting where efforts can be modeled and monitored continually.

TABLE OF CONTENTS

SECTION I- INTRODUCTION

Picture a fourth grade student of average height, physical ability intelligence. The first three years of school come easily to him. Then, all of a sudden; the student's grades start to drop off. The teacher is continuously reporting that he appears to be squinting at the chalkboard and then at books when going from one activity to another. The fourth grader is complaining of headaches when reading, and he is loosing his place. The parents and teacher initially think that the student must need reading glasses, so they have the school give the fourth grader an eye screening. However, the student's eyesight keeps checking out as 20/20. The teacher is beginning to think that a lot of the problem may lie in the fact that the student is unable to concentrate and maybe even be suffering from a learning disability. The unfortunate thing in this given scenario is that the teacher and the parents were trying to figure out what was wrong with this child; they were not entirely informed about the various other learning-related vision problems that can manifest and hinder a person from achieving his full potential.

Educators and optometrist alike have been interested for decades about how visual efficiency and learning work together (Melling, 1999). As a teacher I find I am always on the look out for ways to help improve my students' learning capacity and help them to hone their skills. However, as a mother and professional I am often skeptical and slow to jump on the latest bandwagon. This is why I was interested in learning more about the topic of Vision Therapy (Visual Training). I wanted to know ways classroom teachers could implement some of these strategies into the classroom to benefit all children and especially reinforce students already participating in a clinical Vision

Therapy program. I was also intrigued by how visual hygiene relates to the latest brain based learning research and how it can applied in the classroom as good life skills for all people.

Statement of the Problem

Reading disabilities are very common place disabilities in classrooms these days. The reading process and much of what we do at school is what is called a near point-task, which requires several different types of visual skills. If these visual skills are lacking, students are forced to focus so much of their attention on the part of the reading that should come naturally. Reading is hard enough for most students anyway but when combined with poor visual skills reading becomes a severely labor intensive job. This can develop into a learning-related vision problem that can often go undetected and appear to be a learning disability.

As I stated before, most of what we do at school, work and even leisure, takes a number of visual skills. "Vision processing is a major factor in an individual's ability to attend and respond to classroom instruction (College of Optometrists in Vision Development's website). It is because of the strong relationship between a child's ability to attend and respond to classroom instruction, and how this potentially can affect their near-point tasks like reading, that I believe it is imperative for educators to know more about how the visual system operates and what can be done to strengthen it. From an educator's stand point it is important that we act as a collaborative, multi-disciplinary team with other health professionals to establish effective treatments and provide a holistic and diagnostic teaching plan for individual students. It is important to note that there are things that can be done to strengthen the eye muscles and work on visual efficiency as well as building neurological connections and schemata. However, there is

no scientific evidence that vision therapy cures poor eyesight; nor does it claim too. Eyesight is part of the overall visual functioning skills, but it is only part of the picture.

In schools, at least 80% of what we teach to students is taken in visually. For instance: Reading, spelling, writing, chalkboard work, and computers are all among the tasks that students may be challenged with on a daily basis at school. Based on multiple intelligences, I never only use one way of teaching in my classroom anyway, however, visual skills are still needed even just for listening. Many students are not up to par visually for the majority of the tasks asked of them in school. However, if eyesight is the normal 20/20, over all vision can go unnoticed or undetected, and the student's behavior could be seen as a number of other learning disabilities, behavior problems or general underachievement in school. Students who fit this profile may exhibit several of the behaviors in various checklists for signs of visual, neurological, or even speech and language problems. (Please see appendix for check lists that are helpful for parents and students.)

As teachers and parents we are often times the first people to notice if a child is showing frustration and fatigue during any near-point task, so it is important that we know the common problems to be looking for. Studies show that "of the entire U.S. population, approximately one half of those three years of age or over, require treatment for a visually related problem, and among school-age children, vision disorders affect one in every four" (The College of Optometrists in Vision Development, 2002). This is an astronomical number when you think of the number of how many students in school are struggling for unknown reasons. The College of Optometrists in Vision Development says that some of these very patients have refractive errors such as myopia, hyperopia, and/or astigmatism, which are commonly treated by compensatory lenses. However,

others have additional problems in the functioning of the visual system that are most appropriately treated with optometric vision therapy" (The College of Optometrists in Vision Development, 2002).

Purpose Statement

The purpose of this study is to investigate effective vision therapy strategies and techniques that a classroom teacher can implement into a private schools' curriculum to reinforce reading skills. The vision therapy activities and teaching strategies will be used on 17 sixth graders in a self-contained classroom at a small private school. This curriculum will be for the benefit of all students, but will especially enhance and reinforce students already participating in a clinical vision therapy program.

The study starts with a review of literature on vision therapy and background information, and how students are identified with vision deficits and learning-related vision problems. I will then focus on why educators should care and be involved in this process. Next I will concentrate on vision therapy, visual hygiene and brain based learning theory all combined in a classroom can help learners to be more efficient readers.

Significance of Study

The significance of this study is to begin to bridge the gap between health professionals and educators, in hopes that this multidisciplinary approach to the treatment of poor vision and effective teaching strategies for learning disabilities can work hand in hand. As educators we need to be wary of labeling students learning disabled when all possibilities haven't been considered. When students are able to interpret and attend to print, they are far more successful readers and learners. Much of what we learn in life is

taken in by the visual system. Learning will be affected if the student doesn't know how to interpret information and use the visual system properly.

Research Questions

The purpose of this study is to answer the question: What vision therapy techniques can be successfully implemented into a sixth grade classroom to reinforce and or foster better reading skills? In order to better understand my objective, I approached my research by answering the following sub-questions:

1. What is vision therapy and what background is there within the schools?
2. How are visual deficits found or measured currently in the schools?
3. What is the role of the educator within vision therapy?
4. What visual skills are optometrists improving with different V.T. techniques?
5. How do brain based learning cycles and activities relate to visual hygiene in the classroom?

Definition of Key Terms

Vision Therapy

Vision Therapy is a complex process to define, much like teaching. My favorite definition was that given by the Oregon Optometric Association. It reads: optometric vision therapy consists of a series of procedures designed to improve the specific visual skills and perceptual abilities underlying the learning process" (Oregon Optometric Association, 1991). As just mentioned, vision therapy is much like teaching. Optometrists learn a patient's individual needs, weaknesses, and struggles, then they re-teach their patients how to use their body over again. On the Optometric Extension

Program's website it is quoted that "visual training often falls under the category of physical therapy" only designed for the eyes. "It usually involves a series of visits during which you perform specific activities to remediate your vision problem under the supervision of a professional" (Optometric Extension Program, 2002).

Though there are many different methods of vision therapy throughout the course of this study, I will be focusing on developmental, behavioral vision therapy. Throughout this study I will occasionally refer to vision therapy as V.T. When the reader comes across this, please note that they are one in the same.

Visual Skills

Vision is more than eyesight and being able to see clearly. "It is the ability to visualize, understand and apply the information that comes through the eyes" (Optometric Extension Program – Vision in the Classroom). Visual skills involve observable visual performance. Areas of observable visual performance are: Eye movement skills (ocular mobility); Eye teaming skills (binocularity); Eye-hand coordination skills; Visual Form Perception (visual comparison, visual imagery, visualization); and refractive Status (nearsightedness, farsightedness, and focus problems) (Optometric Extension Program – Vision in the classroom).

Visual Hygiene

"Visual Hygiene involves preventative measures to help reduce visual stress when viewing under near working conditions" (Brill, Cheslock, & Sterner, 1989, pg. 10). This combines many variables much like a holistic classroom environment. These variables include: Proper posture and working distance, proper breathing and blinking, adequate lighting, frequent rest breaks, rotations of the eyes and neck muscles, and proper distance when watching TV.

Brain-Based Learning Theory

Brain-based learning theory is a study of how the brain learns. The brain is sort of map or guide that helps us understand how the brain processes memory, emotion, attention, patterning and context (Weiss, 2000 as quoted in Rattazzi, 2002,). By learning more about the brain and how it works we are able to see how students perform under certain amounts of stress. Brain-based learning theory also pays attention to cycles of rest and break time as well as proper nutrition for optimal performance.

Learning Disabilities

The official definition of a learning disability from Public Law 94-142 is as follows:

> "[Specific learning disability] means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and primarily the result of visual, hearing or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural or economic disadvantage" (Public Law 94-142 taken from Laukkanen (OD) 2nd lecture notes).

In short "Learning Disabilities (LD), is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of

listening, speaking, reading, writing, reasoning, or mathematical abilities" (U.S. National Institute of Health, 1987, taken from Laukkanen (OD) (Med) 2nd pg lecture notes).

Delimitations and Limitations

This qualitative research study took place during the 2002-2003 school year. From December, 2003 to June, 2003, 17 sixth grade students were lead through activities surrounding a school-centered vision therapy model. Activities ranging from hand eye coordination tests and saccadic eye movements to incorporating and maintaining proper visual hygiene, including keeping a brain-based classroom environment, and 90 minute learning blocks of instruction.

In order to keep my values, assumptions and beliefs in check, data for this study were collected through various collection methods such as: observations; parent and child interviews; reading inventories, vision testing, questionnaires and surveys; and frequent measurements of progress in V.T. tasks and activities. Since this is a qualitative research study, focusing on a small select group of students, in a very particular setting, I understand that the scope is "too limited for development of generalizations" (Glesne, 1999, p. 153) and is subject to observer bias. However, I am taking a venture with these limitations so I may reach an in-depth understanding of the V. T. process.

SECTION II – LITERATURE REVIEW

What is Vision Therapy?

Vision Therapy background information – Research sub-question #1

Vision Therapy is part of the practice called behavioral optometry. Behavioral Optometry is essentially an expanded area of the optometric practice. Often times if you were to visit a doctor who specializes in behavioral optometry you would notice that in addition to the routine full 21-point eye exam, you would be tested for even more specific visual skills, such as: Visual efficiency, including accommodation (focusing), binocular vision (eye teaming), eye movements (tracking etc), and visual information processing, including identification and discrimination, spatial awareness, memory, and integration with other senses. The focus of a behavioral optometrist is seeing how your "eyesight" and your "vision" are working together (OEP- website). In much of my research material I found that there is a distinguished difference between eyesight and vision. "Sight is the mere ability to see, and the eye's responses to light shining into it" whereas "vision is the result of a child's ability to interpret and understand information that comes to him through his eyes" (OEP-website). The Oregon Optometric Association says that "vision is a set of skills and abilities of which 20/20 eyesight is only one" (Oregon Optometric Association, 1991). Potentially, children can have 20/20 eyesight and yet may not have the ability to visualize, understand or apply the information that comes through the eyes. Since vision has to do with interpretation and understanding of our world, all the five

senses should be emphasized in the early years of life. Each of these senses are ways in which a child builds a frame of reference and foundation to the visual system.

Physically through the years life, work, school and play have demanded more and more from our eyes and visual system. "Eye Q and the Efficient Learner" a book by James Kimple, educator and a writer for the Optometric Extension Program reports "the human visual system evolved millions of years ago, under conditions that selected characteristics vital for survival. The environment placed a premium on hunting and gathering skills" rather than on near work (Kimple, 1997, p.22). So our human anatomy is not designed for the majority of the skills that we are required to attend to everyday, it is actually designed for survival in the wild and seeing at a distance. What percentage of our day can we really say we devoted to seeing at a distance – maybe 10-20%? However, seeing at a close range or near-point is entirely different. One example of a near-point task is reading, "reading requires a child to focus on material within a foot or so of the eyes, to move the eyes across the page form left to right, to move back to left, [then] find the next line [while proceeding]" to read down the page (Kimple, 1997, p.14). Our body was just not made to perform such tasks, and yet reading is only one thing that we humans do at a near distance. Most every thing we do at school, work, and our leisure time is straining out eyes to work beyond out physical limits.

How Are Students Identified With Vision Deficits Currently?

Research question #2

School screenings are just one way that educators and administrators can be involved in the fight for the visual health of their students. More often then not, this is the students first and possibly their only experience with eye care. "Although schools attempt to do a good job, these screenings are limited and not intended to replace a

thorough professional vision examination" (The College of Optometrists in Vision Development, 2002). As mentioned earlier, these tests measure visual acuity and eyesight, which is only part of visual system, but certainly not the whole picture. Many visual disorders can routinely "evade" detection during the typical school eye screenings. The guidelines throughout each state may vary as far as what test is administered, but typically the "Snellen Visual Acuity" is the sole test to be used in schools. However, just because a student passes the "school vision screening," this does not guarantee the absence of a visual problem; and failure does not ensure that the eye care practitioner will address the visual problem suspected from the screening" (The College of Optometrists in Vision Development, 2002). "A study in Kansas found that more than half of 500 third-graders screened had vision problems that could interfere with reading. Of these, two in five had possible convergence insufficiency" and a large percentage of these students had slipped between the cracks of school screenings ('Vision Researchers Get Educators' Ears at Groundbreaking Harvard Conference," 2001). A comprehensive visual assessment of an individual's visual functioning needs to take place. This "should include an eye health evaluation, measurement of visual acuity and refractive status (nearsightedness, farsightedness, and astigmatism). Of equal importance, the analysis must determine how both eyes work together as a team, how the eyes aim and focus together, and how clear, single vision can be sustained, especially at a near-point reading task" (National Institute of Education, 1881). In addition to checklists and visual examinations, there needs to be a way to educate families on eye care and hygiene, including routine exams and referrals to behavioral optometrists who specialize in learning-related vision problems.

Why This Really Matters To Educators

Research sub-question #3

Some educators and parents do not see that they have a significant role in the visual health of their students or children, and they feel that it is strictly an Optometrists' job. Clinically speaking, we are certainly not the trained professionals; however, optometrists need advocates out there to help them reach people with visual problems. So what specifically can educators do? First of all, teachers need to be informed about the specific red flags that we can be looking for. Checklists will surely help, but what else can we do? Whenever possible it would be helpful to inform students and parents of specific things they can be looking for if they are having difficulty with learning tasks. Learning tasks does not eliminate tasks that students may be struggling with outside of school. Sports, dance, music, any other activity that requires a student to focus on hand eye coordination, balance, knowing where they are at in space, left and right awareness, visual language development, and visual auditory development where communication and language integrates with the visual system. It is then the teacher's role to recognize these problems and to assist the parents and students on where to go for help. The slippery slope is that vision problems are often similar to other learning disability traits and need to be assessed as part of a multi-disciplinary approach to solving a student's problem.

What Visual Skills Are Optometrist's Improving With Various Different V.T. Techniques?

Research sub-question #4 –

Learning Related Vision Problems

As stated earlier 80% or more of schoolwork is taken in through the visual system. The five senses play an integral part between children and their environments.

Vision is the key means for gathering information from the environment, since we live in a very visual world (Kimple, 1997). "Faulty sensory transmission or mental processing would hamper [a students'] learning" (Kimple, 1997, p.12). In order to become or remain successful as a learner students must enter school ready to begin the reading and learning process. The idea of "readiness (particularly "reading readiness) [typically] stresses things like knowledge, vocabulary, color, shape and letter recognition"(Kimple, 1997, p.13). However James Kimple and other colleagues, raised the question: "Are the Child's sensory organs, [their] brain and motor areas, functioning properly as an integrated system" (Kimple, 1997, p.13)? If not, the student is really not "ready" to begin the demands of school. If they do start school, they may find that their learning is stunted; and they could very well end up dealing with a learning-related vision problem. By most accounts "studies show that neither eyes nor, the entire visual mechanism are physically and physiologically ready for a school reading load until 8 or 9 years of age. Yet our children are now carrying a tremendously heavy load by 6 or 7 years of age" (Getman, 1993, p.18). This is not to say that some students do not show reading readiness early, but their entire human developmental systems as a child are not developed for the stress on the system (laterality, directionality, balance, coordination, antigravity, etc.). Children may be overly ready for reading intellectually, but starting too early on reading, may make them develop splinter skills. Splinter skills are much like they sound, a temporary mask to aid students in their development. This may not hinder students for years. However, splinter skills may max out, and students may experience marked declines in their skills later on in school and not even know why. As a sixth grade teacher, I have heard many parents complain that their child is just not functioning the way they used to in school. Things that seemed a given and an easy task just a year

before are manifesting themselves as huge learning blocks. I realize that in addition to the possible lack of foundational learning skills, students at this age are also going through hormonally based physical changes. Dealing with one of these issues is enough, let alone dealing with both at once.

Not all students that have poor vision will need remediation in subjects like reading, and not all students who have a hard time learning how to read have poor vision. More often than not however, these two things go hand in hand. "We [tend to assume] that healthy children should have little problem with school work and that learning to read is primarily a mental activity" (Kimple, 1997, p. 12). This is just not so. Because vision is a learned process, vision therapy can then be seen as just one more strategy and element to be considered when doing reading remediation. The goal of vision therapy is to integrate all of the senses, with vision as the dominant sense (Kimple, 1997). This goes hand in hand with "Howard Gardner's theory of the Multiple Intelligence, a theory that acknowledges the many different cognitive styles people use [when processing new information], that gives students the opportunity to learn in a multi-path way" (Gardner as quoted in Rattazzi, 2002, p. 9). The more ways we can have students store information, and make multiple connections while learning, the more in-depth and efficient their learning will be.

How V.T. Helps Learners To Be More Efficient Readers

Although most people are not familiar with vision therapy, it has been around for quite some time. Often it is not held with much regard in the medical field because it is not a treatment that medicates or operates on the patient. Much of the therapy is dependent on several variables, anywhere from the patient diagnosis of symptoms to compliance of the patient in actually doing the exercises on his or her own time. Vision

therapy is sort of like having an Individual Education Plan (IEP). Each patient has a different scenario and situation that plays out when deciding his or her visual training exercises. Essentially, you are trying to give the patients practice with the tools that will help them to improve their visual skills and in turn help them be more efficient learners.

If we look at the process of reading and examine the elements and visual skills it takes to read, I am amazed that we are able to read at all. As quoted by James Kimple earlier, "reading requires a child to focus on material within a foot or so of the eyes, to move the eyes across the page from left to right, to move back to left, find the next line and proceed" (Kimple, 1997, p.14). That is just physically what the eye does when reading. Then the child has to be able to recognize and assign meaning to symbols that could stand for letters, numbers, and different punctuation, all the while keeping in mind that this is all within a relatively short amount of time. This isn't taking into account tone of voice, inflective interpretations that the reader makes, or general fluency and sound quality. To make it even harder…the English language brings even more unique and confusing linguistic traditions such as spelling conventions being inconsistent that makes reading hard to master (Kimple, 1997). Regardless of all the difficulties mentioned so far I have only focused my review of reading on the cognitive aspects such as letter recognition, or phonics, visual memory and other decoding skills. Obviously these are important, but they are only a small part to the reading process.

Below are common visual motor skills key terms, and visual readiness requirements for reading and other near work as quoted in Kimple's book, "Eye Q and the Efficient Learner." These are the elements of reading readiness that all students should be able to do visually before reading can be learned:

- **Acuity** refers to the sharpness or clarity with which on perceives an object. As measured on the Snellen Chart, the most familiar part of a visual examination, acuity is often thought to be the most important factor in visual functioning. However, a child who has sharp vision at 20 feet may not have clear near-point vision. The acuity chart is not a test for other critical aspects of visual functioning.
- **Convergence** indicates the ability to aim both eyes on a single point simultaneously. The eyes turn in to look at a near object.
- **Decoding** refers to the ability to derive meaning from written symbols.
- **Fixation** refers to pauses in the flow of the eye movement as a reader looks at, identifies or recalls the meaning of letters, symbols, or words.
- **Focus** describes a condition in which the information from both eyes provides a single image to the brain.
- **Identification** is the ability to name letters, syllables and words, or to distinguish between "b" and "d", or to know the differences between the meanings of BOUND ("to move by leaps," and something held in limits"). *This process involves a backward and forward "chaining" process in which the meaning of the words and letters coming before or after the one in question determines how the visual stimulus is interpreted (examples: "sow," "sew," and "sow").*
- **Laterality** refers to the ability to differentiate right from left within one's own body and to move the eyes in the appropriate direction.
- **Matching** is the ability to see a letter or word and connect it to prior experience (a visual image or a sound).

- **Recognition** concerns the ability to differentiate between figure and ground (rabbit sitting in grass) or to respond to a word or symbol that one has seen before.
- **Tracking** refers to the process of following a line of print across the page, and to fix the eyes on the appropriate point when finished, prepared to begin following the next line. It includes the ability of the eyes to follow a moving object accurately and smoothly.
- **Visual memory** is the ability to recall a visual image. The image may be the symbols that compose the word itself or the object that the word depicts. (Kimple, 1997, pg 17-18).

Each of these visual skills that are listed above, take place when a child reads. If any part of this process breaks down, the child could have difficulty learning and attending to reading. Take into account for example, reading a short passage from a novel. Kimple describes the process of what happens during a similar reading experience:

> First the child must bring his eyes to bear on a specific point on the printed page (fixation), both eyes must converge at the same spot simultaneously (focus) and produce a single image (fusion). The eyes need to focus the image to be sufficiently clear (acuity) to allow the child to differentiate the relevant material from all of the visual images around it (recognition) and identify the sound or meaning associated with the image (as stored in visual memory). This process may be adequate to decode an individual word but longer units require that the child follow the line of symbols (tracking) from left to right (laterality) and to return to the appropriate place on the next line (requiring simultaneous use of

skills in laterality, fixation, convergence, fusion, and tracking) (Kimple, 1997, p. 18).

Kimple was not focusing on the print of a textbook when describing this process, he was actually describing that of a fictional piece. Fiction has a more enjoyable reading quality and has different reading strategies that go along with it than that of reading non-fiction. Nonfiction reading strategies are completely different. This just proves that there are more complications for the child in a reading situation. Reading then, for some students is such a higher-level cognitive process for them that after it is all said and done, the student has no comprehension of what was just read.

Visual Hygiene and Brain-Based Learning Theory

Sub-question #5

Visual Hygiene

It is no wonder we have such a high percentage of drop out rate and adult illiteracy based on all the complications of vision and reading. One way teachers can help to maintain good visual health in the classroom is by promoting visual hygiene. "Nearly everyone is born with the potential for good eyes and sight. Vision however is learned. And, the way you use and care for your visual system directly affects your enjoyment of play, school or work" (Optometric Extension Program website, 1993). Visual Hygiene is one way to maintain, use and care for your visual system in order to help reduce visual stress when doing near work. A vicious cycle of adaptation is required when viewing under near working conditions for long periods of time. In time this could develop into headaches, eyestrain or many other symptoms.

As I was researching the topic of visual hygiene I noticed how much it follows current brain-based learning theories that are a current hot topic in the scientific and

educational arenas. Many of the same concepts are put into play. I decided to merge them and create a curriculum that blended the two and followed best practices for all students.

Some suggestions on visual hygiene or reading ergonomics that should be considered in the classroom, workplace or home are as follows:

- **Proper Breathing** – Proper breathing helps to increase blood flow and in return increases the supply of oxygen to the brain. Our brain needs that oxygen to be able to focus and to live. In an article entitled "Vision Health Management," Jeffery Anshell says "our breath is our life. Our bodies are governed by the exchange of oxygen and carbon dioxide from our breathing process" (Anshell, 1997). Often times when we read or are faced with a situation that is stressful, we tend to hold our breath. Even if we are not aware of it we are making our muscles lethargic. This will put limits on our eye muscles, and can actually hinder near point activities like reading. Gentle calming breaths are good for maintaining relaxed eye muscles.
- **Adequate Blinking** – Many people complain of dry eye. It is not merely something that is experienced only when concentrating on near-point tasks, but rather an issue that leaves some individuals unable to wet their eyes doing most any activity. It is important to note that this is fairly common. If the symptoms increase and it develops into an extreme case, patients may require surgery and at the very least intense eye drops. In these extreme cases it is not enough to just blink, however, more often than not, it is just a matter of being conscious of blinking at regular intervals. "We usually blink at a rate of about 12-15 times a minute in normal situations. We blink more often when we are excited,

stimulated, anxious, talking, and doing general physical activity. We blink much less frequently while quiet, which includes reading, thinking and concentrating on a particular task [or when under stress]. This staring can strain the eyes" (Anshel, 1997). Blinking is not only important for re-wetting the eyes, but for cleaning and giving the eye a short time to rest.

- **Adequate Lighting** – The Optometric Extension Program says that illumination on the task that you are working on should be about three times brighter than the rest of the room and that you shouldn't read under a single lamp in a dark room. (OEP website). "Visual Function, including reading, will be impaired by light that is too dim, by glare, or by too much or too little contrast" (Grazia, 1996, p. 72). This glare can be very intrusive as well as hard to manage in a classroom setting. Glare can come from overhead projectors, white boards, windows, computers, T.V. screens, the glossy tops of desks, the color of the room, and even the clothes that you wear. Eliminating this glare is especially important for near point tasks. It is also a good idea to mix different types of lighting. One example of this is by mixing incandescent light, florescent light and even natural lighting within the classroom. Being able to direct the lighting and dim it when necessary gives control over several different variables that are otherwise hard to manage (OEP website).
- **Proper Working Distance and Pencil Grip** – This is somewhat hard to manage in a classroom. Usually, there are several different things going on during a particular work session. There may be small groups working on one task, individual students working at their desks, and large groups working with the teacher. From a teacher's stand point, some of these situations are easier to

control and manage than others. O.E.P. has several suggestions on what is physically and ergonomically best for optimal vision. The best distance for reading, writing or any other near point (close up) task, should be about the distance between your knuckle and your elbow, this is about 14 to 16 inches for adults a little shorter for children (OEP website). This distance is often referred to as the Harmon distance. As a teacher, it is hard to go around to each separate group and remind students of this distance. What I do is have a code word that I say that helps to remind students to check their distance. If I notice a few particular students that keep reading close, I would drop the parents a note to ask them to be looking for it at home. If parents continue to notice it at home, I would refer them to the office, where they could review a list of the optometrists in their area.

When writing, students may have developed quite a number of improper ways in which they grip their pencils. O.E.P states the correct way to grip your writing utensil should be to "hold your pencil or pen an inch or so from the tip so you can see and guide it without tilting your head or body to the side" (OEP website). Roughly, all three fingers should meet in that one inch from the tip. The thumb or index finger should never wrap over the other fingers. It is also important to note that the hand you write with will determine the angle that the paper should be held (OEP website) Make sure that the paper is secured so there is no slipping. Teachers need to especially emphasize this correct grip when doing penmanship.

- **Seating and Posture** – Most of the population has had difficulty with soar muscles or strain from poor posture. When posture is poor, the positioning actually affects all other parts of the body. This creates cumulative trauma and

poor circulation to the muscles and could eventually make the muscles more susceptible to fatigue and injury (Garzia, 1996. p. 104). OEP states that people should remain upright when reading or watching television. It is not only important to remain upright, but to also sit straight over one's seat, distributing weight equally, putting shoulders back and chest up. All of this will help the eyes to be focusing equally on the eye task as well as being at the same distance when performing.

Some of our problems in reading and poor vision may be something that we have learned or developed ourselves. The height of the desk and chair can play a role in hindering proper posture. "A poorly designed seating system allows many variations in posture to occur, leading first to discomfort and muscle fatigue, then to muscle strain or injury, and finally to structural changes in the musculoskeletal system…" (Garzia, 1996, p. 105). A good idea to keep in mind is that the "height of the chair should allow the worker's feet to rest comfortably on the floor" and the desk should keep shoulders, elbows and forearms supported in a neutral posture, flexed somewhere between 70 to 90 degrees, but never more than 135 degrees (Garzia, 1996, p. 104). Also, students' knees should not be touching the under side of the desk. There should be at least 3-5 inches of space between the knees and the bottom of the desk. This can be difficult in some grades where students are experiencing growth spurts. Just keep in mind how important one's health is to the overall functioning and I am sure that regular inventory of students and their workstations will be a life skill that you will want them to be aware of as well.

- **Rotations and Massage – These** are remedial exercises for those who have not had proper posture while reading. It is important for everyone to be aware and practice these exercises from time to time to alleviate tensions and stress that build up and entrap toxins in the body. Besides these exercises, it is important to take the time to use massage to work out knots and excess tension. One way to do this is by doing this yourself, asking a partner or caregiver to help, or by going to a masseuse and asking for a deep tissue massage. The list that follows is a therapeutic exercise regimen that is suggested in the book "Vision and Reading" by Ralph Garzia:

1. Neck: Tuck chin to chest. Point chin to ceiling. Turn head to look over right shoulder, then left shoulder. Tilt head to right shoulder, then left shoulder. Repeat 5 times; increase to 10 to 15 repititions.
2. Trunk Flexation-stretch: Stand against the wall, with arms over head and reach for the ceiling. Repeat 5 times.
3. Trunk Rotation: Sitting, clasp hands on left thigh. Raise arms together over right shoulder. Maintain fixation on hands throughout by moving head. Hold for 5 seconds. Lower hands to right thigh. Raise arms over left shoulder. Hold for 5 seconds. Repeat on opposite side repeat on opposite side.
4. Breathing: Sitting, lift one arm over head, breathing in deeply through the nose. Breathe in deeply through the

nose. Breath out through mouth while moving arm to the right and then down. Repeat 5 times. Repeat on opposite side.

5. Shoulder Shrug: Shrug shoulders upward. Hold for 5 seconds. Repeat 5 times.
6. Shoulder Circles: Roll shoulders backward, then forward. Repeat 5 times.
7. Elbow Extensions: Straighten arms and shake fingers and wrists.
8. Trunk Extensions: Sitting, arch back. Hold for 5 seconds.
9. Knee Extensions: Sitting, straighten one knee. Hold for 5 seconds. Repeat on opposite side.
10. Ankle Circles: Sitting, lift foot off floor a few inches and make circles. Repeat five times in clockwise, and in counterclockwise, direction. (Garzia, 1996, p.107)

- **Rest Breaks** – It is more important than we even know to occasionally look up from near point tasks. We need to look up and away from our work to give our eyes and neck muscles a break. These are often called **micro breaks** (Anshel, 1997. They should occur about every 10-15 minutes and should last no more than 10-15 seconds depending on how hard eyes were working previously. While taking a micro break, breath and blink easily, look at a distance of about 20 feet and at several different distant objects (Anshel, 1997). Make sure to keep your eyes active and moving.

Another type of break that should be taken is one termed a **mini break** (Anshel, 1997). This is different than the micro break in duration, activity, and

how often it should be taken. This should be taken every hour, and should last about five minutes. During a mini break one should stand up, stretch, continue with eye exercises as mentioned in the micro break, or even close the eye and visualize a outdoor setting that relaxes the individual. It is helpful to have a water bottle available so that the body remains hydrated as well. In Ralph Garzia's book, "Vision and Reading" he gives an outline of daily exercises that individuals should do to relieve tension in the head, neck, shoulder, and spinal region. He emphasizes that this should be done with proper breathing. Some of these same exercises can be shortened and done during these mini breaks. (A list of some of these exercises is found in the rotation and massage part of this visual hygiene section.

The last type of break that should be incorporated into a school or work place should be one called a **Maxi Break** (Anshel, 1997). A maxi break would be something more like a snack time, recess, lunch, or P.E. The idea of a maxi break is to get up and move. It should also be something where the body is refueled in the process. Really, these should be taken every 2-3 hours.

- **Television** – As more and more children are watching extended hours of television or playing video games, these facts should be incorporated into every home or school as guidelines to live by. O.E.P's website on visual hygiene writes that "television should be viewed from a distance equal to seven times the width of the screen (about 8-10 feet), and while sitting upright. Have indirect laps on in the room, but placed to eliminate glare on the screen" (OEP website). Even though these are all good suggestions they go on in the same article to suggest that watching television "involves and develops very few visual skills

and should be limited to a few hours or less daily, especially for children" (OEP website).

Brain Based Learning Theory

After spending some time looking at each of these preventative and helpful measures I could easily see how habits such as these, could be incorporated into my classroom. In my research for Brain-Based Learning Theory or BBLT I found I was already implementing and exploring how the brain processes based on the physical, emotional and social environment of a classroom. Brain-based learning theory is based on the premise that the brain and the body work together and are affected by their environment. Many different considerations need to be made when looking at what is best for students based on how brains process information. Visual hygiene and BBLT have a strong connection. Much of what I do in my classroom already incorporates both BBLT and visual hygiene. In the classroom, considerations need to be providing students with the following:

- **Choice and Variety** – Based on the information that we know of multiple intelligences, a theory developed by Howard Gardner, it is important in education to provide students with as many different types of experiences as possible. This gives students who make connections in a variety of ways some way to showcase their knowledge. Each student has different gifts and makes connections by different methods. Instruction should start off with whole class instruction and then move to a variety of choices that will provide the same learning outcome. "Some examples of ways students can display their learning include: talking, drama, movement, songs, gestures, projects, drawings, paintings, collages, mind

maps, graphs, charts, models, and different forms of writing" (Rattazzi, 2002, p.7).

- **Feedback and Assessment** – Human beings crave feedback. Our brains use information collected through various forms of feedback as a way to reassess or hone new skills, perceptions, or incites. The way that an individual responds to you, gives your brain feedback. Our brain then uses this to create patterns in the perceived environment and a sort of road map for making the next move. In order to know what our students know or understand we need them to show us. This then gives us time to assess their understandings and give them timely feedback. It is especially important to speak one on one with students and let them explain their thinking. Make sure to use a variety of methods for assessment such as observation, collecting original works, and having candid conversations between teacher and student or observing student to student interviews.
- **Emotions And Positive Learning Environments** – Emotions play a strong role in the way a student attends to a learning situation. "Emotions trigger chemical reactions between neurons" (Rattazzi, 2002, p.8). When emotions are high and intense there is a stronger awareness and are put into concrete memory. Physical, kinesthetic, and sensory environments can play a large part in creating someone's emotion toward a person, place, thing, or learning experience. Much the same way emotions trigger chemical reactions between neurons, physical stimuli in the classroom can trigger emotions. These stimuli can create positive or negative reactions to what is trying to be accomplished in school. Being aware of your students' backgrounds, age appropriateness and cultural norms will help to make the classroom a positive place to spend time.

- **Delivering Information By a Variety Of Methods** – Students will not only show their learning in different ways, they will also take in information much the same way. Again there will be several different intelligences displayed and multiple cognitive styles that people will choose as being best. The more variety in delivering information the more successful students will be at taking the information and processing it. By allowing the classroom to function as a diverse society, with multiple-path ways for development, the more richly learning is imbedded. Information can be delivered by several means, here are some examples from Darcy Rattazzi's thesis entitled Implementing Brain-Based Learning Theory In The Classroom: lecture, storytelling, drama, music, movement, visual aids, videos, pictures, speakers, books, fieldtrips, games, and manipulatives (Rattazzi, 2002).
- **Providing Novel Experiences** – A real life experience is one that brings so much more meaning to learners than that which is just read from a book. Students like to know why information is important to their lives. By experiencing life, students have a reference or a schema in which to attach new book learned material to. This process helps to make information concrete and more in depth then that material which is read or learned from someone else's learning experience. "By creating novelty, the brain is alerted and is more attentive" (Rattazzi, 2002, p.10).
- **Movement and Exercise** – Because the brain and the body work simultaneously, it is safe to say that what we do to one we are doing to the other. When it comes to movement and exercise how much we give to our body directly affects the "efficiency of our brain and it's learning capability" (Rattazzi, 2002, p.10). One

way we can keep out body active and in good health is by physical exercise. "Exercise affects our ability to learn and remember, it strengthens our muscles as well as the cerebellum, the middle part of the brain that surrounds the brain stem" (Rattazzi, 2002, p.10). Exercising specific muscles, helps to improve the finite movements essential for seeing, breathing, increased blood flow, stimulating the inner ear, connecting hemispheres of the brain and other small and large motor skills (Politano and Paquin, 2000, as sited in Rattazzi, 2002, p.10). "Movement is necessary to help reduce stress, increase memory, and strengthen the communication between neurons, and nerve cells in the brain" (Rattazzi 2002, p.10).

- **Nutrition** – Nutrition plays a part in the overall health of an individual almost more than any other factor. From the very moment of conception, the mother's diet and health directly affect the fetus. Malnutrition can stunt the growth or development of so many body systems. The quality of food, purity of nutrients, and quantity of water relate to the way we feel and perform (Rattazzi, 2002). Foods can raise blood pressure, increase fats and cholesterol, make several other chemical exchanges that can help or hinder our attention, memory, and overall efficiency in learning. How can we make sure that our students are getting proper nutrition? It has been a concern of teachers, health professionals and parents alike for years. I think it starts with educating the parents, and giving them resources to call on. Children usually pick up their parents' good and bad eating habits. We also must educate the children to be advocating for themselves. Finally, schools and social work agencies might need to pool their resources and solve some of these equations through intervention.

- **Cycles and Rhythms** – Each person has natural cycles or rhythms to their day of being alert or being at rest. These cycles usually run in "90-110 minute ups and downs" and attention span decreases as the day goes by (Rattazzi, 2002, p.12). Most often your natural body cycle is not something that can be altered. Being aware of your own top periods of alertness is helpful when trying to stay attentive for tasks surrounding school or work. Usually the ability to stay focused is best at the beginning of these 90-110 minute intervals. Different food may give a temporary lilt in energy, but really, maintaining it is what is important. I try and structure my classroom with these numbers and snack time in mind. They directly correlate to the previously mentioned visual hygiene category of 'Breaks.' One break that was not mentioned was that of sleep. This is perhaps our greatest break. Sleep provides our body and brain with time to rest our parts. "Learning is consolidated through sleep and our ability to recall complicated material is hindered" when we doing get the amount our body needs (Rattazzi, 2002, p.12).
- **Eliminating Stress or Threat** – When a child feels an overwhelming threat from the environment, by specific situations or individuals, it can consume the brain, making an incident seem impassable. Some stress is good. It can, if perceived as a controllable challenge, actually create interest and motivation. The problem in a classroom, is teaching students how to decipher between what is important and what is not, then helping them to work past impassable situations (Rattazzi, 2002).

SECTION III – METHODS AND METHODOLOGY

Rationale For Ethnographic Research Design

I will be using the qualitative research paradigm for this study. Miller, as quoted in Creswell, discusses that "the intent of qualitative research is to understand a particular social situation, event, role, group, or interaction. It is largely an investigative process, where the researcher gradually makes sense of a social phenomenon by contrasting, comparing, replicating, cataloguing and classifying the object of study" (Creswell, 1994, 161). Qualitative research is predominately focused on the process of immersion in the everyday life of the particular setting chosen, and less on the product or overall outcome of the study.

My particular study will use the ethnographic research tradition. I chose this approach because I wanted to obtain a more holistic understanding of vision therapy techniques and how they can be used in my classroom. I wanted to capture my students in their most everyday experiences in order to show how philosophies in healthcare and education merge to create a multidisciplinary approach to vision and reading within this private school setting. I understand that a wide spread generalization cannot be made about implementing V.T. strategies in the classroom to foster reading skills. This study has far too many limitations to presume such implications. However, it was more important for me to see first hand how V.T. has helped to promote reading and learning life skills that 20 sixth grade students can take with them into higher education.

The Role Of The Researcher

Within this qualitative ethnographic research design, the role of the researcher is to be an active participant. Therefore I will be the primary data collection instrument,

requiring that I am aware of biases, personal values, and assumptions at the beginning of the study. This holds me accountable to make accurate, detailed, and relevant observations and data transcriptions. My activc involvement in this study means that my methods of teaching, current curriculum, and the relationship I develop with my students will all influence my overall outcome in this study. In addition the way students responded to my methods, curriculum and myself as an individual also plays an influential part to the outcome.

This is my second year teaching the same grade level, and I have fulfilled all coursework for my reading endorsement. Furthermore, I have first hand resources in Optometry while I am at Pacific University, due to my husband's schooling, his professors, fellow colleagues, as well as the resources of quality literature and technical equipment.

Due to my previous experiences, and connections I realize I bring certain biases to this research study. Every effort will be made to ensure objectivity, however, these biases could influence and shape the way I view and interpret the data I collect and the way I understand the learning outcomes.

Site Section

This qualitative, ethnographic study spanned a good part of the 2002-2003 school year. However, the actual heavy involvement in V.T. was only a 6 week program. It was conducted in a small private non-denominational Christian school in the Pacific Northwest. Total enrolment in the school is 212, and the school ranges from Pre-school aged children to 12^{th} grade.

From September, 2002 to June, 2003, a total of 17 students were led through activities surrounding a school centered vision therapy model. There were 15 Caucasian

students, 1 student from the Philippines, and 1 Asian-American student that made up our classroom community. Activities ranged from hand-eye coordination activities and saccadic fixations to incorporating and maintaining proper visual hygiene throughout the entire day, including keeping a brain-based classroom environment, and 90 minute learning locks of instruction. The participants, 11 boys and 6 girls, were at varying achievement levels with varied visual skills. Most were athletes, played in the school band and did other extra curricular activities that they were very successful in. Standardized testing puts the majority of the class at or above their grade level for reading at the beginning of the 6th grade year. By the end of the year fourteen out of twenty students were at or above the 50th National percentile in their over all reading scores. When broken down into categories thirteen out of twenty, were at/above the 50th National percentile in reading vocabulary and fifteen out of twenty were at or above this range for reading comprehension. The reading comprehension was much higher than the last years scores. Other subjects varied more, but I realize one of the main ways that they participate with other subjects is by reading. The curriculum that is used by this school is very heavy on reading and low level comprehension. The text books for each subject are set up so that the answers are usually in bold headings or are in the first sentence in the paragraph. When asked to do higher level thinking, such as analyze data in math, compare two civilizations in social studies, or evaluate the outcome of a scientific experiment, students usually had a very hard time knowing how to think outside the box. Most of the work that they were used to in the lower grades didn't leave much room for self discovery or problem solving with open ended kinds of questioning. This year has been an eye opening experience for most of my students as I have been forcing them to think on their own, when biologically they are pre-pubescent and their hormones have

been pulling them all different directions other than "thinking." As I was doing their reading inventories for the beginning of the year I noticed that they were usually very gifted readers when it came to decoding words in a list, vocabulary. After looking over their scores on the word lists, their reading levels were above average. They read the reading passage with very little errors and at a nice pace and flow however, comprehension was much lower than I would have expected. Only about half of these students got one out of three inferential questions correct and most missed at least two questions out of five on details and main idea. This shocked me, based on their standardized testing the majority were above the national average yet were still switching off when it came to comprehending what they read. Something within their body make – up and their previous learning was not working together efficiently.

Data Collection

The classroom vision therapy curriculum was designed by taking into account brain-based learning, visual hygiene, and working them into a balanced literacy model throughout the rest of the class day. Before carrying out activities or V.T. strategies, I taught students about the eye and what particular techniques should be measured or helped. I observed the students participating in these activities, lessons, and strategies. While observing, I will take accurate field notes and write up my observations at the end of each school day. Along with observations, I will be conducting interviews, and giving questionnaires and surveys to my students. I hope to verify my observations with these procedures in order to help me see if students feel that the extra visual training a student has had is supporting progress in various different aspects of their lives. I will also give students a pretest and posttest reading inventories, and compare their results with the visual screenings done by trained third-year Optometric Interns from Pacific University's

School of Optometry on each student. I assume that any biases inherent in a particular data source, investigator, or procedure would be counterbalanced by this triangulation (Creswell, 1994).

Ethical Considerations and Confidentiality

In keeping with private school protocol, I strictly adhered to the permission authorization process by turning in my research proposal to the school / church board of directors, Pacific University, and by sending out parent-consent forms to be signed in order to participate in this research.

In order to protect the identity of this small private school and that of my students, every checklist, questionnaire, survey, and test that was collected or administered was assigned a numbering system with letters and numbers. Students chose their PIN (personal identification numbers) by randomly choosing one letter and three numbers in whatever order they wanted instead of using their names.

SECTION IV – NARRATIVE

Introduction

This project was conducted in a 6th grade classroom at a small non denominational private Christian school located in a small town in the Oregon Valley. The school is located in a low to middle income area where farming, wineries, and trace amounts of logging are the major form of economy. A growing private university is a chief draw for bringing growth to the community. There is an abundance of small Christian schools in the community, roughly about four. There are five public elementary schools, two junior high schools, and one 4A high school. The school that I conducted my research in, had approximately 212 students enrolled. It employed 14 teachers and only 4 classified staff. Grades range from pre-K to 12th grade. There is a complete athletic program for all students to participate in from 5th grade on up. In the elementary grades there is only one teacher per grade level.

The school building was built as several additions to the church affiliated with the school. Twelve years ago a new gym and classroom facility for High School was built. There is an active pre-school program that takes in 80 enrolled students every year. There are three main buildings. The first one is the gym, high school rooms, and kitchen. The second is the pre-school, office, staff room, and chapel, and the third is the elementary wing. The elementary wing has K-6 all in the same hall. The school does not have a library, or a cafeteria. The lunch program is run by the high school students and their advisors as fundraisers. Students eat their lunch in their own classrooms and then can go outside to play. Each elementary classroom has two large windows that take up

the side of one wall, roughly 10-23 student desks and chairs, a teacher's desk, two white boards, one bulletin board, and a computer.

Private schools in Oregon are not required to hire teachers with their teaching license, however most are heading in that direction. The school is not bound by law to adhere to the state or national-mandated curriculum standards or Oregon's benchmark assessments. This school uses the ABecca curriculum for Science, History, Reading, and English. They use a curriculum put out by Bob Jones for Math and the ACSI curriculum for Spelling. For standardized testing they used a normed test known as the Stanford Achievement Test, which tests over Reading, Math, Science, History, English, Spelling, and Bible. Tests were then sent away to an agency, scored, recorded and normed before being sent back to the school. Test taking takes place in the spring of every year, and seemed to be an activity of excitement instead of a dreaded experience by the student population.

Rationale Behind Using Vision Therapy in a School Setting

As students are continually challenged with more work load for the visual system, and more learning disabled students are being labeled now more than ever, I wanted to look at learning related vision problems and how instruction on proper usage might greatly increase confidence and functioning in reading. I decided to use the combination of Vision Therapy techniques, Visual Hygiene and Brain-based Learning Theory as a foundation for my curriculum design. If we as a society are asking our bodies to work beyond our innate physical abilities, we must teach our eyes how to function to their full potential, as well as keep up the proper physical health required to accomplish this. If we listen to our bodies warnings early on, we can avoid burn out and frustration with near-point tasks like reading. Furthermore, when our muscles are exercised regularly, they

tend to respond automatically. Vision Therapy is designed to teach the muscles in your eye how to work more efficiently. The goal is for the eye to make fluid, forward movements where both eyes are working in tandem and giving the brain an equal message to interpret. The common misconception is that we come out of the whom being able to do this. Our eyesight is a God given function, however, vision is a process that is learned.

Setting of Study and Classroom

The classroom setting is a large part of brain based learning theory and building a framework where visual hygiene and vision therapy can function. I believe that where a classroom is located within the school and what kind of natural lighting comes into the classroom at different times of the day all play a part in classroom management and set up. I will go into great detail describing my classrooms set up, and what management rationale went into these decisions.

My 6th grade classroom was way down at the end of the elementary wing in our building. I had an unusual room in that before the school experienced a surge of enrollment, my classroom was used for a small library. Most of the book shelves were taken out, however, and along the largest wall there were floor to ceiling white bookshelves. This design, though helpful at times, took up a considerable amount of space. This also predetermined the way that I could set up my classroom. I had one whiteboard that was on the opposite wall as the windows. Unfortunately, I could not change this set up. If it were left up to me, I would have put the white board on a different wall, to eliminate glare.

In order to teach efficiently and effectively, I choose to organize my classroom so that teaching and learning has a routine and framework that is predictable and centered

around the safety and creativity of each individual. As much as I can, I like to create spaces or various work stations in my classroom. I like to use the classroom furniture to separate the classroom into individual spaces. I will be going into great detail to explain the set up and reasons why I set up my classroom in this way. To have a classroom function with visual hygiene and brain based learning theory, considerations need to be made before-hand so that organization and classroom management isn't a problem. Imagine yourself as a visitor to my classroom:

As you enter my classroom you will get the same feelings of family and community that my students and their parents feel when they enter.

Upon entering the room you will notice several windows, all facing south that receive the best rays of morning light and on into the afternoon. Natural lighting, fluorescent and incandescent lighting are all combined to provide the best ergonomically correct lighting situation possible for each students' optimal visual learning situation.

Quiet instrumental music by George Winston and other artists, with approximately 60 beats per minute, is playing in the background. There are framed pictures of students and their families as well as several of me and my family scattered around the classroom. Fresh flowers and plants are sprinkled in and out of book shelves and a goldfish that students' named "Wilber" are among a few of the living things that surround students to make up our classroom environment.

You may also notice that the room is designed to have a natural flow that draws you in and directs you to particular stations or designated spaces within the classroom. The classroom is divided into ten main work stations or spaces within the four walls of the classroom. Also in our classroom, right below my desk is a shelf full of stand up 5x7 frames that each student gets to have if they bring in a picture of their family. Pictures

are something that I greatly enjoy in my own house, and I want to encourage students to be proud of who they are and where they come from. This ultimately helps me to understand the students better. I greatly enjoy the kinds of pictures that students bring in; it helps to bring a sense of ownership and self to this space that we literally call home 75-80% of our week. I really want our classroom to feel as much their classroom as it is "mine." However, there is a catch, students who don't bring in a picture by the end of the year don't get to take the frame home. It seldom happens that they don't bring anything in. Some years I have even let students color a picture and bring in. The main idea is to feel part of a community.

Each workstation has a specific function within the classroom. The following is Workstation #1:

Next to the only door in the classroom there is a table with pencil sharpeners, a stapler, a basket full of popsicle sticks used for taking roll, lunch count, and bathroom use, as well as anti-bacterial hand sanitizer and spray deodorant. Just above this table is a chart named "The Everything Chart" which is where students come in and put up either a cold lunch stick or a hot lunch stick to communicate their lunch count as well as attendance. If one of the pockets in this chart remains empty that student will then be counted as absent or tardy by my "attendance clerk." This is all part of their morning routine each day, and students are quite used to this system. It is on this same chart where I flag and follow through with my behavior plan by giving warnings, time outs, step I's and step II's. Beside this chart is a class list that is laminated for taking roll during a fire drill, as well as a fire exit route, bathroom passes, and a copy of the behavior contract posted.

Next to the table and "The Everything Chart," is a white board with the daily schedule written on it, as well as a poster of the Ten Commandments. Behind the white board are both the American Flag and the Christian Flag, and above these, sits the globe.

This first station draws visitors, as well as my own students into the working spaces of the classroom, and helps to answer questions, give accountability, cleanliness, function, patriotism, and reverence.

Workstation #2:

Workstation # 2 is comprised of a white board; maps of the United states, and the World; an overhead projector and pull down screen; our calendar; small side table with lamp; and a "tower of paper," as I like to call it. This station feels like the front of the classroom as it is the location of several large pieces that make up our day. However, students are positioned so that every angle of the room could be a potential focal point for a lesson.

Starting with the white board, you would notice that I placed an attractive, brightly colored boarder around this work space to frame it and draw the students eyes to the white center. All boarders I chose went along with a central year-long theme which combined content that was in my curriculum for social studies, Science, Bible, and Reading. "Survival" was the theme chosen for this year, so I selected boarders that would be up for the whole year and make students curious as to what content would come next. On the white board are things like: a reading centers chart, where the weeks' reading schedule would be at a glance to inform students of what would come next; pocket charts with quotes, Bible verses or other words for arranging into sentences. Occasionally, I pin up large charts that have to do with the content we were studying, or I put large strips of butcher paper for things like KWL charts, inquiry charts, or graffiti type quotes from a

novel being read. I rarely used the white board for lecturing but rather only for doing large class size games like Jeopardy or relay math problems.

Directly above the white board is a homemade map holder that houses two pull down maps and the overhead screen. The holder is shaped somewhat like a shelf, and at times this year we put stuffed animals as inspirations for fundraisers or school mascots' during sports seasons. This shelf became a sacred place where only the best or most prized student things were kept. The maps below and the overhead screen were used just as much and of great importance during our week. I used the overhead everyday, if not several times a day. Students were not used to this until this year, so it took some getting used to. Most students could see from their seats, however modifications were made to ensure that all learners could see, depending on what their current physical abilities were. The maps also were used on a daily basis whether it was for teaching, discussions after videos, or Friday's, morning work called G.R.O.W., which is a geography based curriculum that students really get involved are very hands on when it came to using the maps.

Next, there is a tall, skinny, white book shelf that I like to call the "paper tower." It is located to the left of the white board and it houses colored construction paper arranged by color so students can use it during Art or other projects.

Arranged around the white board are little poster size writing "helps." These posters are things like proofreading marks, and lists of the writing traits and modes. These all come from an in-service about writing towards the benchmarks that I took when I taught in public schools.

I realize potentially that this may look like a classroom that operates where the teacher stands at the front of the classroom and lectures. However this is only

occasionally used as a staging area by myself; instead I am more naturally right down in the midst of my students, or at the various other work stations.

Workstation # 3:

Workstation #3 is a somewhat private corner. It is a reading corner where students are encouraged to sit on the carpet against the comfy pillows and read, work in small groups, check out library books, or play educational board games when the day allows. This year in Science some of the things we studied were trees, plants, and invertebrates; and in Social Studies we focused on Canada, the U.S. and South America. Within the reading corner are calendar pictures covering many of these topics. The corner is also set up to give the feeling of a jungle - with trees made out of cardboard reaching up to give some head cover. The whole thing is supposed to tie into many of the novels that we selected this year that have to do with various types of survival. (Ex: Island survival, arctic survival, wilderness survival and war time / urban survival)

As stated, this is a reading corner, so naturally my collection of reading books are here. I have books sorted into genre collections located in baskets on the shelves with their covers facing out. Most of my books have library pockets with corresponding informational cards on each book with a critique, summary, reading level, and rating by other students. These books are then checked out by the student. Each student has a pocket within a large three ringed binder. Here they switch their card from the binder with the card from the book. Students are encouraged to do this on their own, however I do have a librarian that is in charge of overseeing these activities and following up on books that don't get checked back in.

Towards the back of this workstation, I also have two incandescent lamps that throw a more direct light, which is helpful for reading and writing. This seems to create a

quiet spot where students really migrate. Even though is seems private, from a teacher's point of view, it is not so closed off that I cannot see what is going on in there. One of the book shelves is only about waist level, and it is open both in the front and the back; so I can see through it all the way to the floor.

As much as possible I like to display my books with their covers out to attract more interest. When students only see the spine, they are less likely to skim through while looking for a book. I found this to be true with these 6th graders and even some teachers who borrow books. I frequently rotated my books from the regular stacks to the genre baskets. Throughout the year students were asked to keep track in a reading log of the different genres that they read. This helps them to really learn the genres.

As this is a small private school, there was a shortage of many things that I was used to at a public school. There wasn't really a library for students to go to and check out books. Basically, there were unorganized shelves of books in the hallway. I arranged for a couple of Public Library tours and check out times where students did research and got to know the in's and out's of their public library. In addition to not having a library there was also no school nurse or room to go if your were sick. The reading corner saved us on several occasions when students thought they needed to lie down briefly due to specific illnesses. We became quite resourceful and really made the most of a small quiet space.

Workstation #4:

Workstation #4 is wedged between work station #3 and work station #5. There are a lot of things that are in between these two spaces. The first big thing that you will notice is a large green bulletin board with letters on it. This is the word wall where I post vocabulary and spelling words that I want students to know and use.

The word wall usually has words from science, social studies, or reading. It is designed to be a tool that the students and I use a great deal. Throughout a unit where I use the word wall a lot I may have the students play various different vocabulary building and spelling games during their reading centers time, or I may play a whole group game to review for their exam. The word wall is a good resource for my students and it holds them accountable for misspelling and incorrect use.

In this workstation we unfortunately have to save room for microwaves and a small refrigerator. Our school doesn't have a cafeteria, so students have to eat in the classroom. Consequently, students bring lunches that require heating, so our classroom has to double as a kitchen and dining room as well. I keep the refrigerator mainly for my things, and a few ice bags just in case. Most of my students are quite used to this eating arrangement, as they have been coming to this school for many years.

The next main focal point in this station is the job board. This is something we use daily. The job board is a pocket chart where each student has their name posted on a pocket and in each pocket there is a 3x5 note card that has a job name on it. Each week the jobs rotate so that each student gets a chance to do every job.

Last but not least are the two computers that we have. They are equipped with Windows XP, however neither are able to be on line. This means that any internet based lessons are really forgone for other options. I tried taking students to the local library, but because of the lack of filters that the library had, parents were very much opposed. I did bring in hard copies of various lessons, but it was just not the same.

Students primarily use these computers for word processing, art and playing several educational math and word building games. Later in the year I got a hold of two different encyclopedia CD roms which helped greatly during research papers. Both new

encyclopedias were put onto the computers in addition to Encarta, which was already on each of them. Students found this was a great way to cross-reference.

Workstation # 5:

Workstation #5 is the writers' corner. This is really just a wooden closet that I have converted to additional bulletin board space. This classroom has very little wall space because of the unit of shelves affixed to my one of my largest walls, so I try and utilize every inch. On the outside of this book shelf I have various different writing assignments that I put up throughout the year. I usually post all student work, not just the "best" work. Students who seem to out perform others in writing have a chance to have their work put into a literature and art book as well as have it on display at the Spring Fling (which is a yearly educational fair).

Work station #5 is also the place where the author's chair goes when we share our published stories.

Workstation # 6:

The 6th workstation gets a lot of use. It is another organizational center where I chart each student's progress on homework for the week. The center chart is called the homework board. This is where all homework for the week and even some long term assignments are put up. At the end of each day when we are packing up to go home, I usually use the last 15 minutes before they leave to close out the school day. Students have homework organizers that they get out and turn to the proper week and day. Then subject by subject, together, we go back through the day and try to remember what we have to take home for the night. As students raise their hands and say the homework, I write it down in the appropriate square for the day of the week and subject. If by chance we do not have any homework in a subject for that day, I put an X through that box, or I

may draw an arrow from the previous day's lesson. This system helps students to organize themselves and learn time management skills that will help them throughout their future. This is also quite helpful for students who have been absent. Students are required to take the initiative to see what they have missed themselves (unless a parent called in and requested work to be collected). If that is the case, then on their desk when they return from being absent, there would be a "While You Were Out" homework slip.

Parents, on occasions have also been known to use this in order to make sure their child is bringing home the work that they should be. I don't promote this, however it is good for all parties to know where to find information instead of depending on someone else to give you the answers.

I should also take this time to explain why the chart goes from Friday through Thursday instead of Monday through Friday. Each week I require that everything assigned for the week is turned in on Thursday. This means that anything I assign on Friday is going to be part of the following week and turned in the following Thursday, if no other due date is assigned. I have work due on Thursday because each week I give out awards called "happy grams" which are for students who get all their work completed and turned in on time. Having it due on Thursday afternoon allows me to finish checking off all homework that has been turned in, write out happy gram awards and also make out weekly reports for students who do not have all their work in. Either the happy gram or the weekly report will be on all students desk when students come in on Friday morning. On Fridays students have time during the day to be working on getting their unfinished work in so they don't take it home for the weekend. Students still have until Tuesday of

the following week to get their work in and not have it be counted as late. Anything past that next Tuesday will be docked credit for being late.

In addition to the homework chart, I have two other charts on either side that show every assignment for the weekly happy gram period. The students' names are all to the left side of the chart as soon as they turn an assignment in they receive a check in the box to the right showing that they indeed turned it in. To the right of each student's name, all the boxes for the week must be checked off by Thursday in order to get a happy gram. At any point during their work time throughout their week students are allowed to come up and check what they have in and what they still need to work on. I also keep the current week's chart up as well as the week just before so that they are at a glance during the same time. The two weeks prior to that, are located underneath the other two, just in case there is a discrepancy with my books and what students think. It is nice because it holds me accountable as much as it does the students.

Workstation # 7:

Workstation #7 is more or less a work station for me. However students do spend a lot of time up at my desk. Whether they are asking a question, doing a reading inventory, or meeting in a small group I realized that my desk really is a work station. Behind my desk we have a large bookshelf that fills the length of the whole wall. This has all my teaching manuals, and educator text books. I have also put most all my files into three ringed binders, organized by subjects so I can access them easier. I have slots and baskets for corrected work, uncorrected work, and even work copied off for weeks to come.

On the other small wall behind my desk next to the window, I have a bulletin board where I put a collage of pictures of my family and friends.

In my desk I keep a file on each of my students. I keep a copy of their signed behavior contract, and general classroom procedure's sheets, any time they get a time out, each week's weekly report, or detention forms from myself or from any other adult at the school. I also keep a record of any parent contacts, medical information, as well as each term's goal sheet.

Workstation #8:

Work station #8 is where most of our reference books are located. There are several other things occupying the shelves as well, however the focus **is** on reference.

On these shelves there are dictionaries, and Thesaurus', as well as some informational books on great men and women in science. There is also a plant and a Oregon Beaver's mascot head, that a student brought in, a gum ball machine and a tootsie roll machine that students get to take a turn at every now and then. In the foreground of a lower shelf is a spice boat from a visit I took to Tanzania, Africa. Occasionally, I use it when we are talking about the slave and spice trades of Africa during History class.

On adjacent shelves our class fish Wilber sets in his clean fish bowl, and a Dr. Suess hat that I wear during Read Across America week. Below this shelf are thunder eggs, crystallized and milky quartz, granite and andesite rocks, along with a magnifying glass for viewing tiny crystals and organisms. There are also more plants and reference books on nature. This shelving is used as a science discovery area where I have mentioned I have many rocks, shells, insect containers, and magnifying glass' to foster student discovery and experimenting. The shelving also houses two compound microscopes and several prepared slides.

This bookshelf also holds the many class sets of novels and encyclopedias that I have in the classroom. There are also student dictionaries, National Geographic nature books, my job jar, and each student's individual supply box.

Students hand in their work as they complete it to the old wire baskets on the far left. These baskets are each labeled by subject so my students can turn their work in to the appropriate spot. After I grade and enter their scores in my grade book, I put them in the back of a white crate. They then wait there to be filed into each student's appropriate file. On Friday's students take a parent letter and all of their corrected work in a manila envelope, named the "Friday Folder." Parents know to be looking for the Friday folder, corrected work, and either a happy gram or a weekly report from their student each week.

Workstation #9:

Workstation #9 is another self-made display area. It is located behind the door so that when the door is shut, it is visible. I usually put up a different interactive display every time I switch units, for science or social studies.

I only have pictures of a few of my science displays. These were added to during the course of the units and students referred to the charts on several occasions when working on lessons individually or as a group.

Workstation #10:

Workstation #10 is what I like to call the "floor." It is comprised of the students' desks, which are all grouped together into table groups, and then the floor in the literal sense of the word. In a small classroom you use every single inch to separate students when working together. The floor is nice for doing posters, or for studying, reading or discussing something where two people have to be talking or reading next to each other.

It is amazing what kind of an effect a small desk can have on acting as a sound barrier to other working pairs or groups.

Each desk or table group also has a number hanging above it, so when I divide students up they will always know where their group is supposed to sit. This really makes it handy when it comes to classroom management. When I want particular numbers to be paired all I have to say is: "Let's have the 2's sit at table 2," and so on. I can also write commands ahead of time on the reading chart or the overhead to make transition quicker. This also provides students with more that one mode for taking in directions.

Lessons and Activities

Over a 9 week quarter, students will be involved in 6 weeks of vision therapy activities, proper visual hygiene, brain-based learning and 10 lessons that walk students through each of these things just mentioned. These lessons are developed to inform and teach students the importance of eye care, how the eye works and the profession of optometry. They also teach each of the visual training techniques that will be used during the six weeks of V.T.

Please see appendix G – P for the complete 10 lesson plans. I have displayed the lessons in a lesson plan format but have asterisks beside noteworthy commentary to help the reader understand the thinking behind the lesson or learning activity.

Observations

During the six weeks that we focused on vision therapy, I noticed many changes begin to happen in the classroom. Students were very excited and enthusiastic about doing V.T. and seemed to really want to hone their skills. They would frequently team

up with a partner before going home to do there V.T. and reading homework. They also began to use all free work time (this is extra time, when they are done early with an assignment or lesson) to work on mazes, word finds and other extra V.T. activities

I have noticed that students were also far more aware of proper lighting, and glare received through the eyes than ever before. Posture continually kept improving with about 3/4 of the population along with pencil grip and working distance. However, there are still at least three students who I have to be reminded daily about the importance of each of these. During most reading time done at school, I have been noticing very little head movements or finger tracing since the first two weeks of V.T.

Most students seem to prefer natural lighting as apposed to the Fluorescent lighting especially after lunch. I don't know if that is significant or not, but I feel it has something to do with the way the afternoon light shines in our windows. The natural light is bright enough, and if coupled with fluorescent light, it seems to be too much light and glare on the overhead, whiteboard, desks and papers.

It doesn't appear that nutrition is being thought about with at least 1/3 of the student population. Soda is the main form of liquid drank by most students at lunch time. Most of their lunches and snacks, if any, are high in refined carbohydrates and sugars, not balanced for optimal nutrition, and energy giving attention. I have also noticed that many of these students bring highly processed box or microwavable lunches. I realize that part of this may certainly have to do with the fact that there is no lunch room or lunch program. Also some students even have had their lunch delivered to them daily from a parent who bought fast food.

Students were given water bottles at the beginning of the year by myself and were allowed to fill up every time they used the rest room or before they went to P.E. This

helped with hydration, but ultimately they were the ones drinking it or not. Neither I nor the school allowed soda to be drunk during the school day except at lunch time. However, I highly discouraged it. I did also factor in breaks as mentioned before. Most of those breaks were for energy consumption. Students always had water at their desks and then a mid-morning snack. What they chose to bring was up to them. They also received two five minute breaks; once in the morning and the other in the afternoon between classes.

Most of the lifestyle changes were beginning to stick within the classroom environment. However, there was no sure way to measure if they really were going on outside of the four walls of the classroom.

Responses to Questionnaires

At the very end of the six week program, I had the students answer a short questionnaire regarding their personal response to how they felt about their improvement. Following, are the questions and answers given by the majority of the students. Not all students were present the day of the questionnaire, and no make-ups were attempted.

1. Did you enjoy doing the eye tests?

Yes =	12
No =	0
Undecided =	1

2. Do you think your vision has improved after practicing vision therapy and reading together?

Yes =	6
No =	2

Undecided = 5

3. What eye exam was your favorite?

Groffman Tracing =	2
Eye-Hand Control and Fine Motor Coordination =	6
Circling the ABC's =	0
Continuous Motion =	2
Saccadic Fixations =	1
Hart Chart (homework) =	1
Dot the O's from the news paper =	0
Mazes and Word Finds =	1

4. What eye exam was you least favorite?

Groffman Tracing =	4
Eye-Hand Control and Fine Motor Coordination =	1
Circling the ABC's =	2
Continuous Motion =	3
Saccadic Fixations =	1
Hart Chart (homework) =	0
Dot the O's from the news paper =	1
Mazes and Word Finds =	1

5. Did you use your proper visual hygiene when working in class? (ie: good lighting, proper posture, etc.)

Yes = 3

No = 4

Somctimes = 6

6. Which do you think is more important when reading: Speed or Accuracy?

Speed = 1

Accuracy = 12

7. On your own time have you done any mazes or tests since the testing stopped?

Yes = 7

No = 3

Not yet = 3

Even though students were somewhat undecided in some areas of this questionnaire, I usually observed the opposite of what they answered. For instance, I did see more students using their visual hygiene than what they actually thought they did. Some other conservative stances were taken during the end-of-task questionnaire; however, most of the ranges seemed about right with my own observations.

Individualized Reading Inventories

At the beginning and the end of the six week V.T. program, I conducted an IRI or Individualized Reading Inventory on each student. The IRI is a reading assessment format that has the students start out with a vertical list of words beginning at the pre-pimmer level, and going all the way up to 8th grade. Each list has 25 words and once the student has 22 or 23 right out of 25 they may advance on to the next grade level. This is working on word identification in isolation. Once a frustration level has been reached the teacher has an idea of what level of reading the student should be able to handle as an instructional text and what should be an independent reading level. The next part of the IRI, is to have the student read a leveled text aloud while the teacher takes a running record of: errors, self-corrects, substitutions, insertions, omissions, reversals, or repetitions (basic overall miscues). This passage also will be timed for my assessment purposes and pace and fluency will be assessed. As part of the IRI students are then asked questions regarding vocabulary within the text, main idea, inferential questions and several detailed questions. Students answers are then scored by giving a percentage based on the number correct.

For this inventory, I chose a collection of normed testing materials that I had available to me. Because I was at a private school, teachers were not required or used to doing these types of reading inventories. The form that I chose to use to record and document my findings, was from a performance booklet by Jerry L. Johns from Northern Illinois University called "The Basic Reading Inventory Performance Booklet." This form gave me a spot to record scores for words in isolation (word lists), context passages, and comprehension questions. There was also a place for general observations, room to differentiate between types of miscues and the frequency in which they took place, and

finally on the back, a qualitative analysis continuum for comprehension, word identification, oral and silent reading and reading attitude and confidence.

In order to give my students who might be at the same level on the post testing as they were on the pre-testing, I needed a variety of text options. In order to do this I chose to select text from a variety of other readability booklets. This however, takes much of the validity out of each of the published inventories. They are no longer normed scores that the students are receiving from my analysis. However, I felt comfortable with this venture. The passages and the questions were each normed in there particular area; the only problem would be comparing them against each other. I understand that every text will allow interest and readability to play a part in leveling. However, I felt that two different reading inventory texts wouldn't make that big of a difference as long as they were both normed individually, with a similar questioning, scoring and answering formula. In my opinion this was better than taking unleveled material, and selecting my own questioning format. The two forms that I used were: "The Mann-Suiter Developmental Paragraph Reading Inventory" and the word identification and oral reading paragraphs from "The Center For Applied Research in Education." The only draw back was for some students I could have used higher text than just grade eight. Much of my students, are reading at level two grades above the norm, so you can imagine the discrepancy that could make in an assessment piece when trying to determine a students range of ability. Much of what I find by doing reading inventories is also balanced by personal observations, other forms of assessment, and the students own attitude and drive towards reading.

After reviewing each of the pre- and post- inventories, I noticed that many students who could read and decode words on the word lists well, were not good at

comprehension. Much of their reading seemed flawless and pleasant to listen to. However, no information was gained from their readings. This greatly concerned me. Most of my vision therapy techniques were to increase visual tracking skills and binocular teaming. The areas I would be focusing on are all areas that can be improved upon, however, because of their pre-assessment scores I found that they were not as weak in this particular areas as they were in visual processing.

In comparing students' reading inventory scores I found that about 70% improved their scores. Of those 70%, 60% actually went up a whole or even two levels. This means that what was once instructional at the beginning, was now independent after vision therapy. Some problems that I ran into during the post assessment, was that some students were past the 8th grade leveling system that I had for both reading inventories. This made it hard to know exactly where they were reading at the end compared to the beginning. However, improvement was certainly found and shown on the post assessment and in the classroom.

On the flip side of the 70%, roughly, the other 30% of the student population stayed the same. In some cases the overall reading level didn't go up, but the comprehension questions were answered with much greater accuracy or fewer errors and miscues were made. I understand that some of that might have to do with interest in the varied content between the two inventory forms. However, the questioning format and types of questions were similar enough to show a growth.

I did have one student who actually wasn't around to take the pre-assessment inventory and one that didn't take the post-assessment inventory. One student came in the middle of the six weeks as a transfer from a different school. I still recorded all of his scores and kept him on the graphs for the final, even though he never did the pre-

assessment. The other student was on a suspension during the final week of testing and never took the post test. I did send home the V.T. activities, some got done others did not. However, re-assessing this student didn't work due to additional behavioral difficulties. The Principal and myself opted to not have a complete profile on this particular student, so there was no post-assessment done on this individual.

*Please see appendix Q for a copy of the forms that was used for this assessment.

Developmental Eye Movement Tests

This pre and post assessment was to measure how students' eyes move from one spot to the next. It measures both horizontal and vertical eye movements. "The Developmental Eye Movement tests, [or DEM,] provides the clinician with an objective measure on the child's eye movements and ocular ability" (Laukkanen, 2003). "This test is normed for children 6-13" (Laukkanen, 2003). This kind of assessment is very important when assessing reading. Gilbert, author of "Functional motor efficiency of the eyes and its relation to reading" theorizes that the control used in making eye movements, closely relates to that which is used in reading. Other theorists believe that the DEM is too difficult for kindergarteners and that the test is able to factor out the automaticity of number knowledge (Laukkanen, 2003). While there is still debate surrounding this form of normed assessment, tests conducted in 1997 found that "46 out of 91 responding optometrists reported using the DEM 'all the time' or 'frequently'" (Laukkanen, 2003). Other surveys found 50 of the responding optometrists to indicate that they feel the DEM was "extremely" or "very" useful.

I felt especially comfortable using this form of measurement with the age group of my students. I do feel that if I had students younger than about 3rd grade I would have

used a different measurement process. However, based on all given facts surrounding the DEM and my limited time with each student, this was the best fit.

The DEM showed me exactly each students ability on vertical and especially horizontal eye movements. The graphs and tables that follow in the appendix how each student scored and how the horizontal scores compare to the vertical ones. Where there is no score or graph line connecting two points together for a student, there was no score due to extenuating circumstances explained in the reading inventory section.

SECTION V – ANALYSES AND INTERPRETATION

The purpose of this study was to explore vision therapy techniques that could be successfully implemented into a sixth grade classroom to reinforce and foster better reading skills. I realize now in hind sight, that these two subjects are much more complicated and have far too many variables to take on in a classroom setting and expect any drastic changes in just six weeks. That is not to say that I feel there isn't a place for visual health and vision therapy techniques within the school setting. I do believe that my findings while conducting this study, have led me to the conclusion that vision therapy techniques can enhance a reading program. My original attempt was for the school to act as a liaison where V.T. could be practiced and used as an authentic experience for students already participating in a rigorous behavioral vision therapy program. However, as I researched I felt that it would be safe to say that all students would benefit from some of these tests. This is where a general change was made: I decided I would do a case study on a whole class where students were all on the same program for VT.

I was limited by the school that I taught at, to just the six concentrated weeks. I feel that it would have been more beneficial to spread the consistent brain-based learning theory, visual hygiene and vision therapy over the course of the whole year. I believe these consistent habit forming exercises would develop into life skills and ultimately a body re-trained to work more efficiently. Most vision therapy programs are over the course of a year, and six months at the very least. A year allows enough time to elapse so there is more measurable data showing improvement as well as adequate one-on-one time spent on each students' specialized skill enhancement as well as allowing for maturity and visual growth. Most of the skills being retrained are ones that have developed over a long period time, and will not go away by only spending fifteen minutes a day for six weeks, plus homework activities. This is where my study needed more time and resources.

During this study, I also focused on only one section of the visual system: ocular saccades and fixations or eye tracking skills. This is not the whole picture of V.T.. Many of my students seemed to have higher scores than I expected on their pretests when it came to word lists in isolation and even decoding words in a paragraph with speed and accuracy. Their real problem lay in what they retained after the passage was read. Students showed such focus on decoding, but very little on visual processing. Looking back and knowing what I do know now about vision therapy, there were other techniques that would have been more beneficial to students who struggled in these areas. However, to tailor make a program for each student is really what a clinical V.T. program is all about, and I was not trying to attempt that with this study. In order to get the kind of results that I was looking for the classroom setting is not the place to do this.

One device used for testing that I did not have at my disposal was a Visagraph. This is a highly adaptive machine that can actually track and chart out the patients eye movements as text is read either aloud or silently. This is really ten times better and more accurate than the DEM or the Reading Inventories. Having something like this would have given me a more accurate picture of where each student needed to improve.

Students responded very well to the visual hygiene and the brain-based learning that was incorporated into my everyday teaching. Both of these teaching methods or techniques remained longer than the six weeks that were focused on V.T. alone. This might explain why these skills became a habit for these students.

Even with these limited conditions, my data still comes out showing that ten out of seventeen students made progress in one way or another the other seven stayed about the same. Two actually scored lower on the DEM for horizontal eye movements than they did on the pre-test. This was disappointing, and changed the overall average. However we still show that the majority improved. It was disheartening to admit that there is just no way to know if possibly they were just not trying on that particular day. I realize that most of the gains were not largely significant, but given more time and more precise measurement tools I am confident that the gains would have been greater. The class' average for their pre-vision therapy DEM assessment was 45.946 seconds, with 1.8 errors. After vision therapy for only six weeks, they had progressed to 44.47 seconds with 1.3 errors. Again, this isn't the large numbers like I had hoped for at the beginning, but as I learned more about vision therapy, the more I realized that there are too many variables to expect rapid change – especially in a large and all inclusive setting where specific plans were not developed for each individual. Another realization that I had while researching, was that while some students where much above the norm on the pre-

assessments, others fell far below that norm. Few of my students didn't have the background that others did with reading or vision. Those students didn't even have a visual system mature enough to start the very first vision therapy activity. So everything that we did would have been too difficult for them and no learning would have taken place, since the difficulty of each exercise increases with each week. These students are really the type who need the whole vision therapy model.

I found it frightening how very little the parents know about how vital the whole visual system is to a child's whole learning capacity. Many of the parents complained of the same things with their own vision that students did when given a checklist of visual problems. What was surprising to parents, was that vision therapy is not just for children, it is for every person, until your dieing day. The optometry office that my husband has been at has several elderly patients. It is important that as our bodies change and get older we know how to change with them and adapt with our bodies. It really is all a re-training and life long learning process.

I believe it is more important now than ever before for teachers and students to be informed about potential road blocks when it comes to learning. During the lessons that were taught during this study, students learned about the anatomy of the eye, how to properly care for their visual system, where to go for help with specific symptoms, and how they can keep working to hone their skills their whole life. Because of this curriculum students were given some of the very building blocks they will need to keep advocating for themselves when it comes to their vision.

* Please see graphs and tables in Appendix A- F for DEM pre and post assessments. For individual V.T. test forms see Appendix Q .

SECTION VI - REFLECTION

Throughout these past three to four years while my husband and I have been in school, we have jointly learned so much about child development and ultimately about ourselves. I know that by taking on this research project I have broadened my views as a teacher, a mother and a human being. It has given me more knowledge and resources to help my students and their parents. I have also learned to value the research process and all that goes in to attaining knowledge in this area. Since going this process I have new questions and I seek to find the answers to those questions by continued reading through valid sources.

Since conducting this action research in my classroom, I have taken a Vision Therapy course through the Optometric Extension Program. This has opened my eyes to new ways that I can be involved in the fight for students and parents to know, understand, and enhance their visual system. I know that ultimately I may have to make a choice about where I see my career heading. Teaching can be done in other arenas, besides just in a school. I think that is something that I have learned while doing this project. I was always so focused on teaching in a school that I never thought about other ways in which my passion for helping could be teamed with my other interests in order to be more fulfilled and touch more lives.

Though my data showed only small measures of improvement, I feel that this project has been a huge success. I got to know my students very well last year, and have remained in contact with them and their families. Most of the modeling and activities surrounding vision and learning did really become life skills for these students and have made improvements in their lives even as they have gone on to other schools to finish their education.

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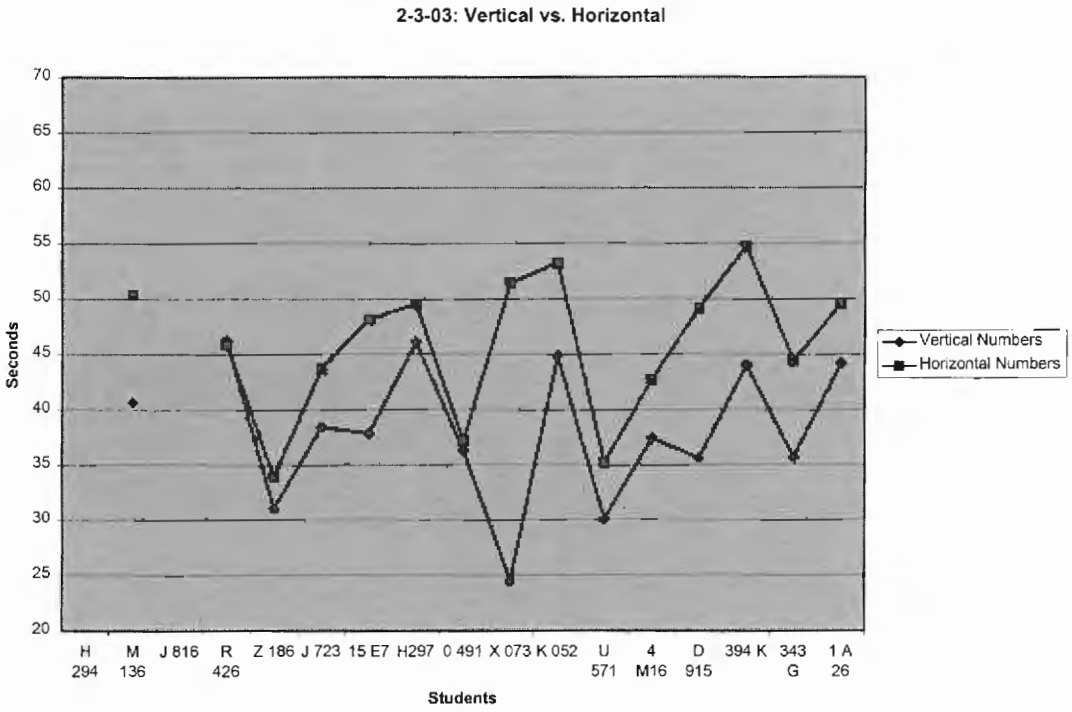
Appendix

A - P

Appendix A


2-3-03: Vertical vs. Horizontal
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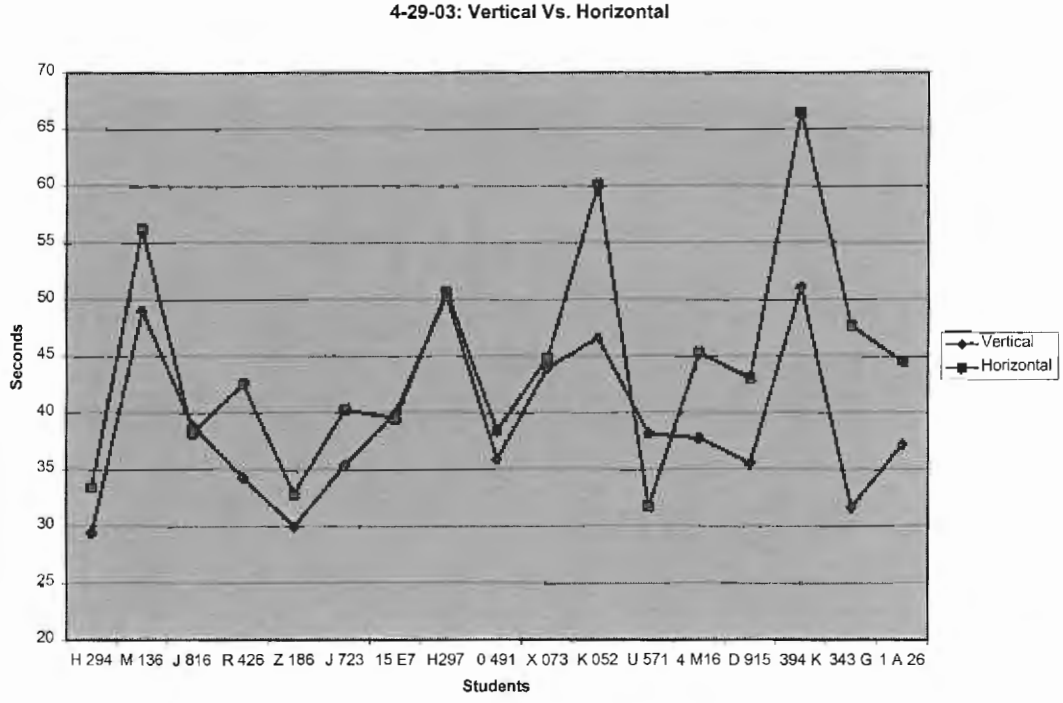
65
60
55
50
45
40
35
30
25
20
H 294
M 136
J 816
R 426
Z 186
J 723
15 E7
H297
0 491
X 073
K 052
U 571
4 M16
D 915
394 K
343 G
1 A 26
Students
Vertical Numbers
Horizontal Numbers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Seconds
70
65
60
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25
20
H 294
M 136
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R 426
Z 186
J 723
15 E7
H297
0 491
X 073
K 052
U 571
4 M16
D 915
394 K
343 G
1 A 26
Students
Vertical
Horizontal

Appendix B

Pre-VT DEM assessment

2/3/2003

	Test A	Test B	A + B	Horizontal	Errors
H 294					
M 136	20.64	20.02	40.66	50.34	
J 816					
R 426	23.58	22.65	46.23	45.87	
Z 186	16.15	14.91	31.06	33.96	6
J 723	19.45	18.97	38.42	43.71	5
15 E7	18.34	19.52	37.86	48.16	1
H297	22.48	23.59	46.07	49.54	1
0 491	18.83	17.48	36.31	37.21	
X 073	23.6	20.91	24.51	51.42	7
K 052	23.96	20.84	44.8	53.22	5
U 571	15.77	14.34	30.11	35.2	
4 M16	18.14	19.27	37.41	42.7	1
D 915	16.83	18.78	35.61	49.16	
394 K	21.11	22.89	44	54.71	1
343 G	19.71	15.98	35.69	44.41	
1 A 26	22.2	21.96	44.16	49.58	
	Avg	Avg	Avg	Avg	Avg
	20.05267	19.474	38.19333	45.946	1.8
Max	23.96	23.59	46.23	54.71	7
Min	15.77	14.34	24.51	33.96	0

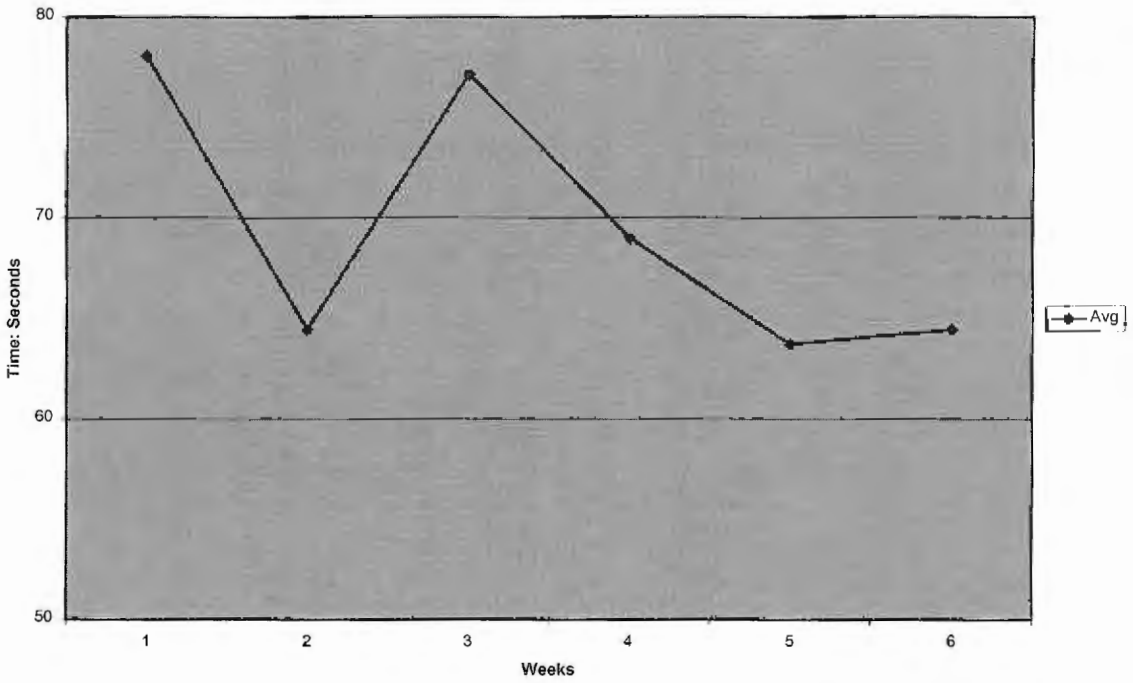
Appendix C

Post VT DEM Assessment

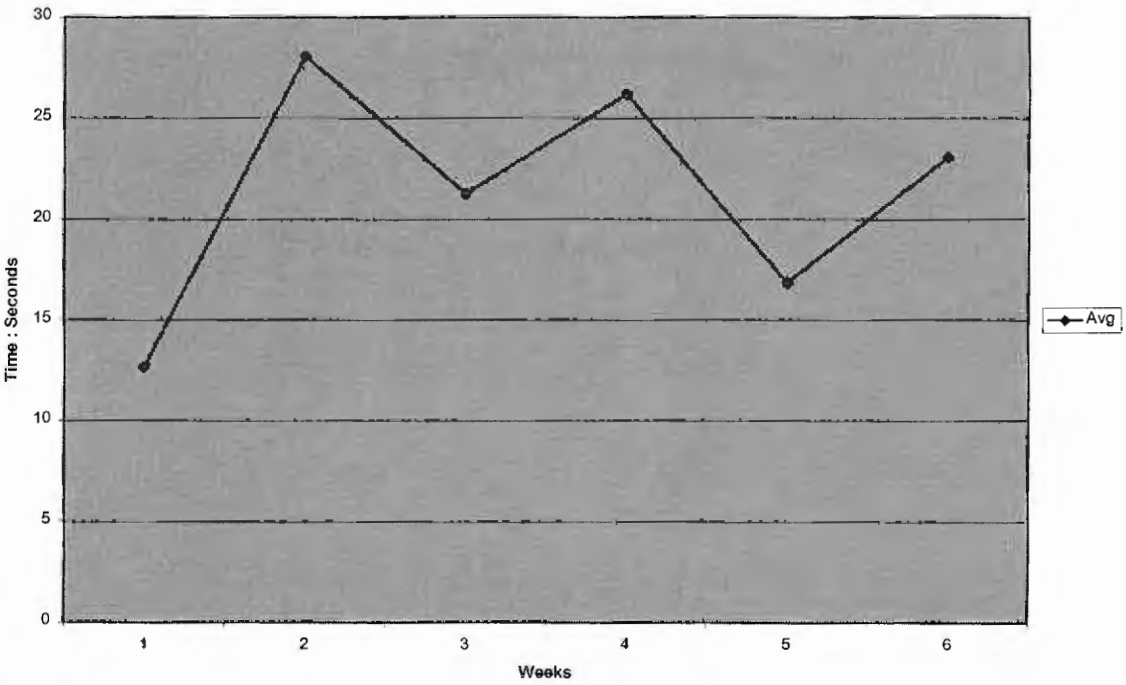
	4/29/2003				
	Test A	Test B	A+B	Horizontal	Errors
H 294	14.87	14.53	29.4	33.4	
M 136	25.56	23.45	49.01	56.23	3
J 816	21.06	17.84	38.9	38.22	
R 426	17.87	16.43	34.3	42.56	
Z 186	14.63	15.34	29.97	32.84	
J 723	17.37	18.03	35.4	40.32	4
15 E7	20.63	19.35	39.98	39.47	1
H297	25.03	25.31	50.34	50.68	
0 491	16.29	19.6	35.89	38.47	
X 073	22.5	21.47	43.97	44.81	1
K 052	22.41	24.2	46.61	60.15	1
U 571	15.28	12.9	28.18	31.75	
4 M16	18.78	19	37.78	45.31	5
D 915	17.25	18.31	35.56	43.09	4
394 K	22.25	28.84	51.09	66.47	
343 G	14.25	17.37	31.62	47.65	3
1 A 26	18.38	18.84	37.22	44.57	
	Avg	Avg	Avg	Avg	Avg
	19.08294	19.45941	38.54235	44.47	1.29
	25.56	28.84	51.09	66.47	5
	14.25	12.9	28.18	31.75	0

Appendix D

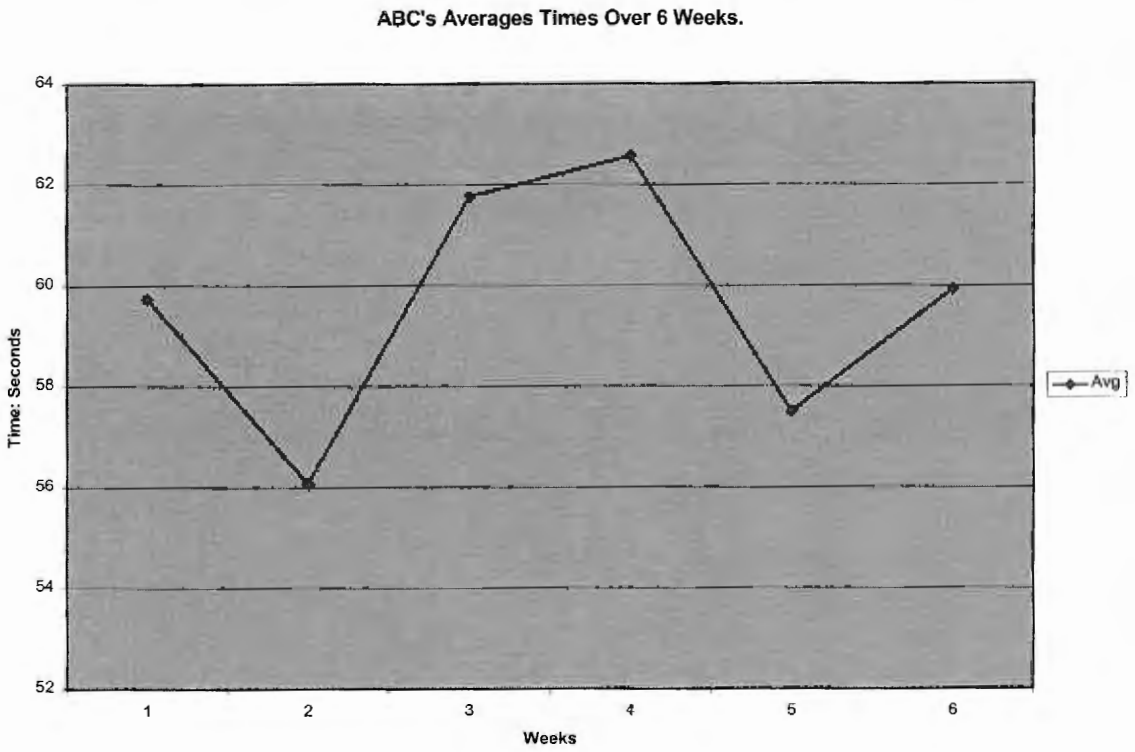
Cont. Motion Average Times Over 6 weeks.

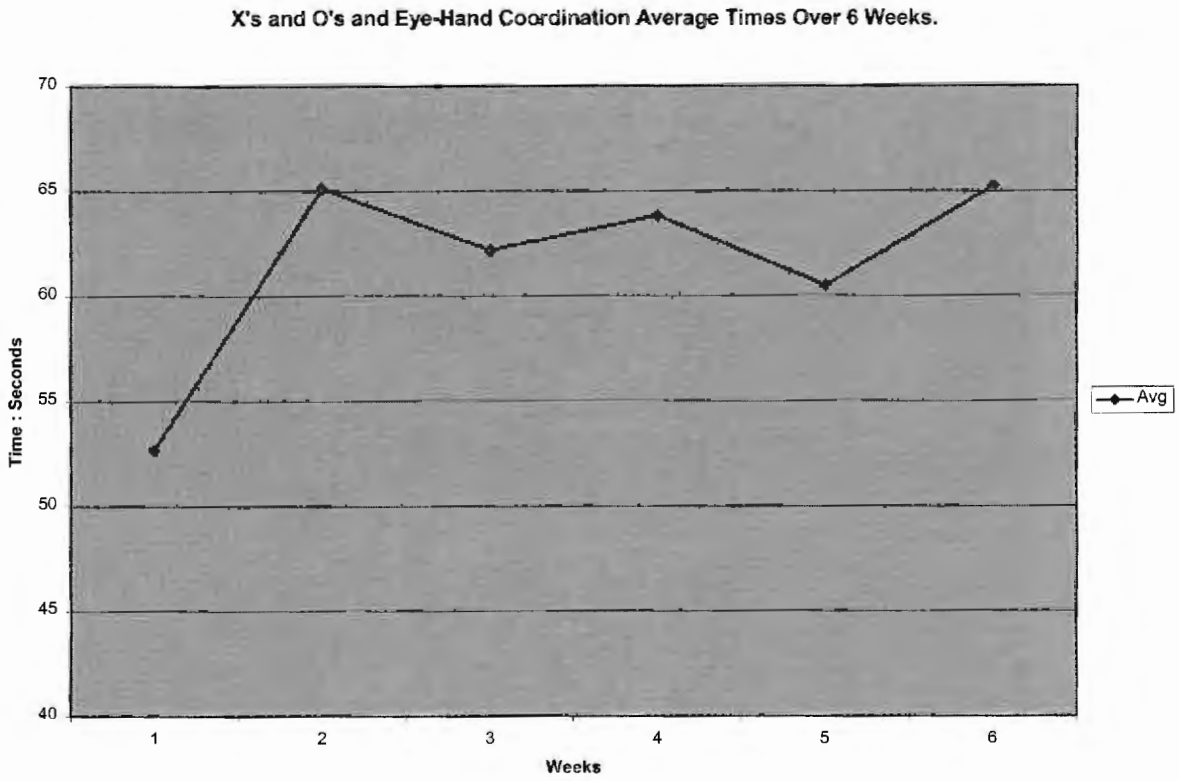


Saccadic Fixation Average Time Over 6 weeks.



Appendix E


ABC's Averages Times Over 6 Weeks.
64
62
60
58
56
54
52
Time: Seconds
1
2
3
4
5
6
Weeks
Avg


X's and O's and Eye-Hand Coordination Average Times Over 6 Weeks.
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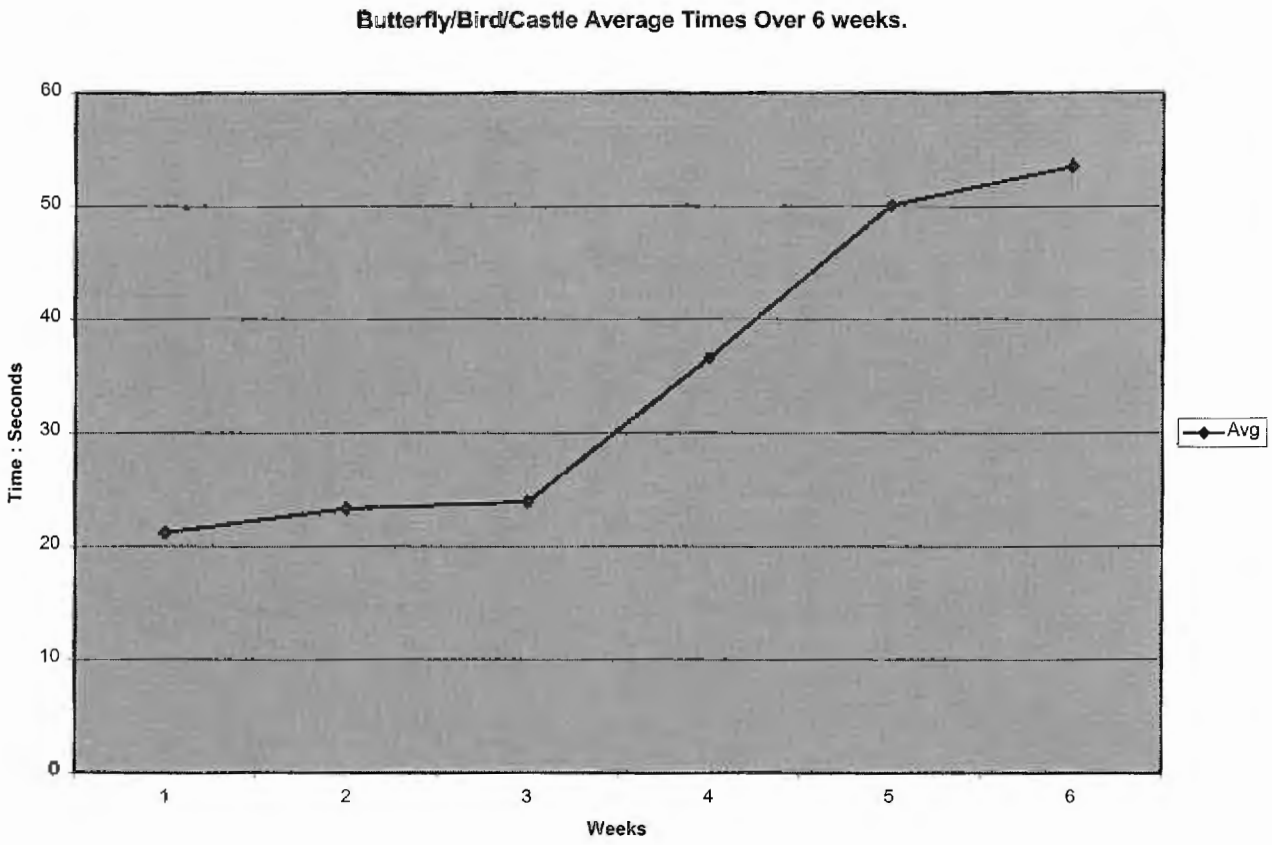
65
60
55
50
45
40
Time : Seconds
1
2
3
4
5
6
Weeks
Avg

Appendix F


Butterfly/Bird/Castle Average Times Over 6 weeks.
60
50
40
30
20
10
0
Time : Seconds
1
2
3
4
5
6
Weeks
Avg

Appendix G

Micro Lesson # 1

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd where ever appropriate.

Topic: The eye and sight vs. vision (background knowledge)

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.
- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction and taking notes with a graphic organizer **TSWBAT** demonstrate their understanding of the eye by making a model out of a Styrofoam ball.

Anticipatory Set:

Play a game of hang man using these words: eyes, optometrist,
sight, vision

- "We are going to be talking about the eye and how important it is to keep our eyes healthy. Keeping our eyes healthy will help us see and ultimately read better. During the next couple of weeks we are going to have guest speakers, projects, games, and tests with partners, and we will even learn the parts of the eye."

Learning Activity:

Group Activity Demonstration (Activity #1):

Take out the model of an eye and put up the overhead transparency that corresponds with it.

- "The eye has many parts. I am sure you are familiar with some of them, but other parts you will be learning for the first time today."

I would have my "paper passer" hand out graphic organizers for taking notes.

The organizers would focus on vocabulary and eye parts. Students will label parts on organizer as we go through and talk about each one on the overhead.

Vocabulary words: Cornea, vitreous humor, iris, pupil, retina, lens, optic nerve, eyelids, eyelashes, extra-ocular muscles

* This should get students oriented with the eye and the very important job that it plays within the body. Students will also be learning how important it is to take rest breaks for the eyes.

Micro-break :

- "Because our eyes can get tired of focusing on one task for extended periods of time, it's good to take breaks."

- "One way we can do this is by looking up from our reading or up close work (knitting, writing, homework, etc..) and focus on a distant object, shape, or building out a window. This may be hard for some of you."

- "For instance, this whole time we have been working, I have been asking you to look down at your paper, then back up at the overhead. This is working your eyes more than you know."

- "It is important to look up and away from the work you are doing."

- "Keep remembering to give your eyes a little break like this while working in class, on the computer, or any other near work that that you are doing."

- "Make sure that you keep giving your body lots of oxygen. Oxygen stimulates the brain and gets proper blood flow to all your parts including your eyes. Even steady breathing can help to reduce stress and keep your eye muscles from tightening on you."

- "One more thing that is important to remember when having a micro-break is to blink often. Wetting your eyes and keeping them from getting dry can help to reduce eye strain."

- "When we are sitting and doing quiet activities our body naturally tends to blink and breath less. Just being conscious of it will help to keep up regular intervals."

* This is one component of having proper visual hygiene. Other breaks will be planned for and incorporated into every lesson I teach from this point on throughout the year. However, I will not explain them or write them into lesson plans the way I did this one. I hope to turn these into habits for myself and my students in order to promote visual hygiene as a way of life.

Learning Activity (part 2):

- "We are going to be making a model of an eye ball out of Styrofoam balls."

- "First, please set aside the piece of paper you have been taking notes on, but do keep it by your side because you will need it. I will be calling groups up to get the needed supplies after I set a few ground rules."

Rules for Project:

1. No throwing Styrofoam balls before or after they are made, or they will be taken away from you.
2. No sword fights with the pipe cleaners
3. We will be using push pins and each person gets 15 pins and no more. Don't lose these, this is very important.
4. Absolutely no poking of any kind with the pipe cleaners or the push pins.
5. I will call groups up one at a time to get supplies. (Students will get to pick whatever eye color they wish.)

6. We will not start until everyone is ready, so please wait quietly and see if you can quiz each other over the parts of the eye. (Randomly hand out chocolate eye balls to students who are following directions.)

Materials:

- Styrofoam balls,
- rounds of construction paper (green, brown, blue)
- black permanent markers
- wax paper rounds (large enough to fit over the Styrofoam ball)
- quarter sized rounds (cut from clear plastic lids, milk jugs, water bottles, ext…)
- lots of sewing pins with flat heads
- red pipe cleaners
- red rounds for optic nerve and retina

Walk students through putting the eye together:

1. Start with ball
2. First, put colored circle on eye ball. (make sure to center it!!!)
3. Take clear plastic circle and put a black dot in the center. Then pin this over the colored circle with only one pin poked in the center.
4. Next, place the circle of wax paper over the whole front half. Pin into place w/ 5-7 pins
5. Pin the red circle on the back of the eye and stick the red pipe cleaner out the center of the red disk

- "Lets see if we can name each of these parts. You may use your notes if you would like. Go through each part by pointing and asking each group to confer with members and share the answer.

Mini Break:

- "We need to get up and move our bodies and wake up, bet the blood flowing again."

    1. "Stretch up to the sky with both arms, shrug shoulders up and down, stretch down to the ground (follow the leader or Simon says??)."

    2. "Now lets sit down so I can to show you some eye tricks or illusions."

    3. "Take your sheet of paper that you are taking notes on and roll it into a cylinder-going the long way (hot dog style) so that it looks like an empty paper towel roll."

    4. "Next, place it up to your eye and look through it." Look at your neighbor. Then up at me…now look across the room, picking something,

not someone, to focus on and bring your opposite hand up next to the paper."

5. "The paper and the hand should be touching, so that the hand is blocking the view of the other eye. Allow both eyes to view what you decided to focus on. What do you see? Does it look like you are looking through your hand?"

Closure:

- "Lets review what we have learned today. Turn your notes over so you cannot see the side with the graphic organizer. Turn to one other person in the group and share two thing you learned today to your partner. Partners must remember those two things (so listen carefully). Next, the partner will share two **different** things they learned, along with the 2 things their partner learned to the rest of the class."

- "I will give 3-4 minutes to share and then we will finish."

- "If you and your partner finish early, take out a piece of paper and copy down the homework from the overhead, then put your pencil and head down so I know we can move on."

Share with partners, then regroup.

- "Now that everyone has had a chance to share what they learned with their partner, I am going to randomly choose people to share what their partner learned." This way I can make sure students listened to their partner." (drawing pop-cycle sticks, have kids pick from a deck of cards, or pick by the clothes that their wearing, color of eyes, hair, etc… until everyone has gotten a turn.)

Modifications/ Extensions/ Early Finishers:
Homework:

- "Tomorrow we are having an optometrist come in to talk to us about our eyes, what he/she does, and how we can take care of our eyes."

- "I want you to think of 5 questions that you have and can ask our speaker."

- "This can be about the eye or anything pertaining to what optometrists do."

Appendix H

Micro Lesson # 2

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd as appropriate.

Topic: Eye care and hygiene

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.
- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction **TSWBAT** demonstrate their understanding of visual hygiene and the difference between sight and vision by participating in a guest speaker's activities and the American Optometric Association's color and activity book for children.

Learning Activity:

- An optometrist from the local area, will come to speak as part of a monthly speaker series. Students will have prior knowledge/background about the eye and will also have questions already generated for the doctor.

- The optometrist will briefly describe what he does, where his office is and then each student will get the optometrists business card to put in their local "business yellow pages" (made during the first week of school for speaker series cards, etc…)

- The optometrist will focus the majority of the lesson on the difference between vision and sight. (* There is a vast difference between these two similar terms and it is important that students know the differences. Students need to know that the simple eye chart tests for sight i.e.: The Snellen Eye Acuity - 20/20, are not a full proof system when talking about the whole scope of "vision".)

- The other major focus will be on Visual hygiene. Visual Hygiene is the importance of taking care of one's eyes by proper lighting, posture, nutrition, breathing, etc.)

- There is an educational color and activity book from AOA (American Optometric Association) that will be the background organizer for the presentation.

- For grades K-3 the optometrist would basically stick to the book and just doing the coloring.

- For grades 4-6 using this for early finishers to color and focus on eye health, proper hygiene, routine eye exams, etc…will work best.

- Key Words:
  - **Sight:** is the response to light (ability to send signals to the brain about the perception of light)
  - **Vision:** Is the process of getting meaning out of what is seen, and understanding and integrating what prior experiences you have received through sight, touch, hearing, taste and smell. (ability of brain to interpret the signals sent from the eyes)

- These words will go up on a word wall so that students are responsible for knowing the difference between the two. They will have know how to spell and use the words correctly. Each week we play a game called "vocabulary soccer" with the words from the word wall. The words come from a variety of places and subjects. It is mostly for vocabulary, however, spelling does count.

- Micro, mini, and macro breaks will be kept up throughout the whole day as reminders to students' overall health and visual hygiene.

Closure:

I will review with students at the end of the day since the speaker will take questions and be working with students up until it is time for him/her to go.

The speaker will have several visual illusions and trick activities. He/she would also bring in instruments from their own practice and do some demonstrations to initiate better retention by giving hands on learning.

Appendix I

Micro Lesson # 3

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd as appropriate.

Topic: What is Vision Therapy?

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.
- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction **TSWBAT** demonstrate their understanding of vision therapy by writing a 3-4 sentence paragraph explaining what they know and by participating in a discussion about V.T. and why it is important to the visual system.

Anticipatory Set: Baseball teams like the A's, Giants, Mariners, Tiger Woods, Adam Archeleta (free Safety for St Louis Rams), basketball players, etc…

- I am going to write some names up on the overhead and I want you as a group to give me one word that you think will describe all of these words. Now don't just think of the obvious…try and think about what we have been talking about the last few days.
- All of these teams, athletes, etc…participate in ????????? programs. (answer: Vision Therapy or Sports V.T.)

Learning Activity (Group Activity-Lecture- Part 1)

- "We have been talking lately about our eyes and how important they are to us. They help us to do most everything especially activities in school and large motor activities such as sports and even playing on the playground. That is why, when we are doing school work we are going to learn some activities that will go along with our book learning in order to strengthen our eye muscles. This process of exercising is called vision therapy. For the next 6 weeks we will be doing different exercises that will help to improve your eye movements. Some will even help eye hand coordination (thus improving sports performance). These are somewhat different than the type of drills pro-athletes might be doing. However, some are very similar."

- "Is there anyone in this class or that you know of that has broken a bone and had to do physical therapy? You must re-train your muscles to work together properly with the fixed bone. Vision therapy is the same concept…it is re-training the muscles of the eyes to work together properly."

- "Your eye muscles are constantly being asked to work here at school. We are always reading, writing, using numbers, shapes, and doing art work that requires our eyes to work well together. When they are not working together well, then problems and splinter skills will develop. (Splinter skills are kind of a short cut or substitute skill so that you can still get an assignment accomplished, however, it usually means that you never learn how to do the skill correctly. When you learn new skills, you are building new skills on top of incorrect ones. This leads to holes in your overall ability.)"

- "Many of you may think…I have great eyesight, the nurse said so. However, 20/20 eyesight says nothing about how your eyes work together. In fact, you could have 20/20 eyesight with only one eye, and the other eye could be 20/200 and you would still see 20/20 vision with both eyes open."

- "These exercises are just that…**exercises** and we know that exercise benefits everyone right? So this VT is not just for students who were glasses or for athletes it is for all of us."

- "I will begin each day of reading doing a different eye exercise. For the first week I will walk you through each activity, we will graph our success/results and file our papers in a chart folder. Each student results will be completely confidential. I will use the whole class' results as part of my thesis. However, no one will know who you are or what your scores were. To ensure this, I will pass out a piece of paper for you to make up a four digit pin number. This will act as your identification number and it will be used if I ever refer to individual students. This pin number can be letters or number but not your initials or your name."

- "Does everyone understand? Do you have any questions so far?"

- **"Anytime** you do lessons or activities with V.T. you will need to use this pin#."

I would have students choose #'s and read them off to me so I know who is who just for weekly credit on assignments.

Next, I will hand out their folders, show them where they will keep tests, & where and how they will graph results.

Each student will have a partner that will time them w/ a stop watch while it is his/her turn to do the exercise. Then they will switch, graph results, and turn in their folder and stop watch.

This process should all take no more than 15 min of our hour reading time. Students will become quick and efficient in doing these tests and taking care of their folders.

(Group Activity – Hands on learning – Part 2)

As students came in to class this morning, they each had to take a sticker out of a hat. Each sticker will have just one match. I asked each student to keep their sticker until reading time where we would be doing an activity. They weren't allowed to change stickers with anyone **and** they weren't allowed to look at the sticker.

It is important to note that the stickers I chose were hard to describe. They weren't everyday objects. They were shapes and squiggles in uncommon colors.

- "Students now that we are just about done with all of the explanations of VT and the process of how we will do it. I need for you to take out your sticker that I gave you this morning and a piece of paper and a pencil."

- "Please place the sticker (with out looking at it) on your forehead. When I say go you are going to have to go find your match. The only catch, is you don't know what your sticker looks like so you will have to have to ask others to describe it."
- "By a raise of hands how many people think that this will be easy? How many think it will be hard? How many don't know?"
- "Because I have taken away your own "sight" (not being able to see your own sticker) you will have to use other senses: listening, asking questions, drawing, visualizing etc."
- "Make sure to be careful walking around the classroom- this is not a race." ….On your marks, get set… Go!

Secretly I will be timing them just to see how long it takes us as a whole class.

I will be walking around giving pointers on ways to ask questions in order to be more efficient and I will make sure no one is cheating.

When everyone has found their partner and is sitting down, do a debriefing.

Closure:

- "Now that you all have your partner lets talk about what you each did in order to find him/her." (Have students raise their hands and share.)

- "What I realized is that when one part of our body isn't working very well, then the rest have to work overtime. What happens if other parts are not working? This project would be almost impossible, and if not impossible very frustrating...right? Do you think you would try and do a project like this again if it was that difficult for you? Probably not. This is why several students avoid reading and doing other activities that requires their eyes to work hard."

- "To those of you that I helped, did this make it easier the next time you had to ask a question?"

- "Vision therapy should be much like the help I gave you. I teaches or trains you how to be able to tackle your problems better."

- "How many of you found it really hard to visualize what your sticker looked like without ever seeing it? Vision is a collection of different skills and abilities that the eye and the brain do together, if one of the parts isn't working, it needs to be fixed. This is what vision therapy does, it can fix the parts that are not working in your visual system."

- "For homework, I want you to explain in a 3-4 sentence paragraph, what vision therapy is to you. Try and recall the examples that I gave, but put it in a way that makes sense to you."

- "I will give you about 3-5 minutes before I turn you loose for recess to talk to you partner and run some ideas past them. Share ideas back and forth, and right them down. You may also write down some of the ideas that I gave you. I will put them up on the overhead along with the question that you need to answer tonight. We will be sharing these tomorrow."

- "This partner will be your partner for the whole 6 weeks of Vision Therapy."

Modifications/ Extensions/ Early Finishers:

* At the beginning of the day tomorrow, students will share what they wrote with their partner. Then, they will have to get up and share what their partner wrote and shared with them.

Appendix J

Micro Lesson # 4

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd as appropriate.

Topic: Continuous Motion Eye Activities

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.
- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction **TSWBAT** demonstrate their understanding of the continuous eye motion test by explaining the eye exercise to their parents and successfully completing the vision therapy activity while being timed.

Anticipatory Set:

Hold up a standard dot to dot

- "Please raise your hand if you know what this is? How many of you have ever done a dot to dot before? Do you like them? Do you find them challenging ? What if I asked you to do it as fast as you could, that you couldn't stop moving your pen or pencil **and** you couldn't pick it up off the paper? Now would that dot to dot still seem boring?"

- "The eye test we are going to do today is similar to a dot to dot. I will be asking you to do it as fast as you can and you will be timed. I also need you to keep your pen/pencil moving at all times and don't forget, you cannot pick it up off the paper."

Learning Activity:

- "The test we will be doing is called continuous motion. You will be practicing how to keep your eyes looking forward and moving in a quick continuous motion. This improves how your eyes work together, or "tracking". Tracking is essential for reading. This should eventually help you to improve your reading fluency skills."

- "Keep in mind you are not just following something with your pen and your eyes. (Tracking) You also have to be able to follow numbers in sequence. This takes processing. Which means you have to see the number through your eyes—your optical nerve then takes what you saw to your brain, your brain processes this and tells your body to react based on this number. Sound complicated? This is also what you do when your reading."

- "Now, there is one more catch, I already said I want you to keep your pen on the paper, but here is the deal, you cannot rest your hand, wrist or forearm on the desk either."

- "Do you think you can do this? Do you have any questions?"

- "I'm going to give you 30 seconds to get w/ your partner. Each person needs to be sitting at a desk, in a chair across form one another. You may need to sit at a whole different desk that doesn't belong to either you or your partner. Don't forget to bring a pencil/pen and please push in your chairs."

With timer in my hand, say "go" and time them for 30 seconds.

Once everyone is seated with their partner, have a helper pass out stop watches. Let each partner play w/ the timer for 30 seconds to practice learning how to use it.

Have another paper passer, pass out half of the folders w/ me.

Once all has been handed out, and experimented with, have each student look at the continuous motion handout. Show by example on the overhead, how they are to do the test. Review directions by calling on people with their hands raised.

Students may choose which partner will go first and then begin.

Walk around and observe how each student is doing.

When everyone is finished, tell some things you saw that went well and some things that need improvement.

Some things to be looking for are tight, neat circles around each number (This will come with practice), proper posture, pencil grip and distance from work.

Closure:

Carry out a small "wrap it up" discussion on the days continuous motion exercise. Ask students how they think this will help reading skills.

As a whole class, walk through graphing the results for Monday day 1(continuous motion), week 1.

Modifications/ Extensions/ Early Finishers:

* Homework is to take a copy of the test home and give it to one of their parents. They must time their parents doing the exercise just the way they did, then they have to explain what this exercise is strengthening. Parents will sign off on the test saying that this happened. I usually type up the directions for students and parents on the hand out so all know the directions. This seems to keep parents in the loop as well. They are your biggest ally.

Appendix K

Micro Lesson # 5

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd as appropriate.

Topic: Saccadic Fixation (& and @ symbols)

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.
- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction **TSWBAT** demonstrate their ability to move their eyes together from left to right in a reading pattern by successfully carrying out the saccadic fixation exam while being timed.

Anticipatory Set:

- Put up two symbols: & and @ ask: "What are these two symbols and what do they mean?"

- "How many & symbols do you see here?"
  & & & (3)
  & & & & & & & & (7)

- "Now : @ @ @ @ @ @ @ @ @ @ @ @ @ @ @" (15)

**Secretly time students on how fast they are at doing this. Ask students how hard this activity was on a scale of 1-10 (ten being the hardest)

Have students raise hands as each number in the continuum is called out.

- "All those who thought it was a 1, raise your hand....2, raise your hand etc...."

- "This is exactly what we will be doing for our next V.T. exercise. The only difference is that we just did this on the overhead, which is more at a distance, and the exercise for today will be on a sheet in front of you at near-point."

Learning Activity:

Have everyone look up at the overhead and go over the test.

- "This test will be training your eyes to follow stationary targets rapidly and in this case to count them."

- "This increases overall eye accuracy for near-point tasks as well as other eye tracking skills like in sports."

- "We are strengthening some of the same muscles and neurological pathways that are necessary for reading. These quick thinking activities will help to increase your body's tolerance for what it takes to do many of the subjects here at school."

- "Your partners will be timing you again and keeping watch for a few things."

- "Here are the rules: (1) You **can not** bob your head or point at each symbol. (2) You must **only** move your eyes and count mentally." (Please don't count out loud)

- "Again you have 30 seconds to get with your partner, get your folder, the stop watch and then sit down. To make things less hectic, one of you get both folders and the other get the stop watch. Please meet in the same spot as yesterday."

- "GO!"

Once students are settled with their partners and ready to begin, check to see if there are any more questions and let them begin.

(* Note - Each week the symbols get smaller and there are more of them on this activity.)

Closure:

- "How did it go? Was it harder than you thought?"
- "Now we are going to take the three scores you got and average them. The mean is what we will graph for day 2, week 1."

Go over how things went with students and review what the test is working to improve.

Appendix L

Micro Lesson # 6

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd as appropriate.

Topic: ABC's

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.
- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction **TSWBAT** demonstrate their ability to scan scrambled letters and pick out meaning by successfully completing the vision therapy exercise called "ABC's" while being timed.

Anticipatory Set:

- "Lets all sing the alphabet A...B...C...etc. Most of us all know the alphabet well by this time in our education, right?"
- "Well this next VT test/exercise will have to do with knowing your alphabet, but there is a catch like always. It should be somewhat challenging."
- "This next exercise is on the order of a word find. Can I get a raise of hands if you have ever done a word find either in school or for fun? Good so some of you are familiar with how to do them."
- "The idea of a word find, for those who are not familiar, is to locate words that are jumbled with other letters, that don't go together."

Learning Activity:

- "This is the same idea for our V.T. exercise today, except you are searching for the alphabet, not words. The alphabet **will** be in order, but they will not be in a row (or all together)."
- "When you find the letter you will circle it quickly and keep scanning for the next letter. If you get to the end and you are off by a letter or two (in other words you don't end with the letter Z) you have to go back and find your error while the time is still running."
- "This really is fun and it may even feel easy with this first one. However, just like all these activities they get harder each time. On the ABC test the letters and paragraphs get smaller each week."

There are several different tests on the same sheet. I have the students cut them up and distribute them around so we can save copies and paper. Students could also use the extra forms to practice on their own time, or give them to their parents and see how well they do. Some of my students and their parents really enjoyed doing this together.

- "I would like everyone look up at the overhead while I demonstrate once again, how to do this. You **may** rest your wrist or forearm on your desk for this one. I want to remind you of the proper distance and seating position. Keep breathing and focus both eyes on your target. Scan as quickly as your eyes will allow you to take in and process the information. Circle the letters in succession and keep going. Also, the circles should be neat and tight around the letters, not sloppy and large enough to swallow your paper."

- "This test is training your eyes to pick out info from text in a quick and accurate manner. By scanning for important or correct information you are ultimately helping your eyes to move with accuracy and precision which are the same skills you use in reading."

- "I will give you 30 seconds to get with your partner, your folder, and your stop watch."

- "Are there any questions? If not, go ahead and start."

Closure:

Walk around observe posture, and grip on the pen or pencil. Also be checking for heads bobbing, tracing each row and each letter with the pen/pencil etc…

After they are finished go over observations: try not to move head. Put the pencil on the paper only when you are circling. Make sure that the only things moving are your eyes. Next graph results together in their folder on Day 3 week 1.

Modifications/ Extensions/ Early Finishers:

* Have a variety of word finds and other related activities on hand in the classroom for early finishers so if they are ever in need of an activity it is stimulating their eyes. One thing I start adding into their spelling homework at this time is word find activities. In these particular word finds, the students put their spelling words in and made them on their own. Then they would switch with a partner and solve. You could always copy a few off and let those stay in a pile for early finishers throughout the day/week etc…

Appendix M

Micro Lesson # 7

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd as appropriate.

Topic: X/O's and T/O's eye hand coordination

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.
- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction **TSWBAT** demonstrate their ability to use hand eye coordination by successfully completing the vision therapy activity called "X's and O's or T's and O's" while being timed.

Anticipatory Set:

- "Today our V.T. exercise is going to be focusing on hand eye coordination."
- "Who feels pretty good about their hand eye coordination?"
- "Of you that feel confident, are you athletes...or artists?"
- "Athletes and artists both have to have good hand eye coordination—but one specializes more in fine motor and the other in gross motor. Which is which? Can you explain the difference between the two? Raise your hand to be called on."

Learning Activity:

- "This exercise will call for a little of both…and a lot of concentration."

- "The goal of this activity is to get your eyes to send a message to your brain, the brain then processes the info quickly and sends an order back out to the hand. The hand then has to execute that move one direction or another in a quick and smooth manner."

- "When you think about how many steps are involved in making our bodies function, it's amazing that we can even do what we do. This will be a good chance to practice making the pathways in your brain shorter and more precise."

- "I will pass out a form to you that will either have X's and O's or T's and O's."

- "Here is an example of what it will look like": Show on overhead.

- "Without laying your wrist, or forearm down on the desk you need to draw some lines around each letter. The X's will have a line under them and the O's will have a line over them. This has similarities to continuous motion, in that you will not remove the pencil from the paper."

- "Again, this will be timed and checked for accuracy by your partner."

- "The goal in all of these V.T. activities is to train the muscles, the eyes, the nerves and ultimately the brain to be working together without hesitation or lags. This **should** be automatic for most of us, although you will be surprised how many pro-athletes and artists alike can still hone and develop sharper skills."

- "I know this may seem really easy to several of you. What is great about this exercise is that we can always get better, faster, and show improvement.

- "At first glance this doesn't have the obvious connection to reading that some of the other tests had. However, you have to keep in mind we are working you're your whole visual system."
- "You have 30 seconds to get with your partner, get your folders and the timers. Make sure you are sitting quietly when you are ready to go."
- "Does anybody have any Questions? If not, then go ahead and start."

Closure:

* Check for understanding and observe how the first run went. When they are all done come back and talk about observations.

Graph results for day 4, week 1, put everything away and return to reading lesson.

Modifications/ Extensions/ Early Finishers:

* Lessons will gradually get shorter because students are getting the hang of what to do, and how much time they have to do it in. By the following week, students should be able to come in from being out of the classroom, get their supplies for doing V.T. and be waiting for the tests to be passed out. I will still be walking around checking on posture, pencil grip, and overall proficiency. However, I will not need to graph the results with students. With their partners they will graph as soon as they are finished with their activity and then be done and waiting for reading to get started.

Appendix N

Micro Lesson # 8

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd as appropriate.

Topic: Butterfly/ Bird/ Castle (Groffman tracing)

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.
- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction **TSWBAT** demonstrate their ability to use their eyes to trace a stationary line by successfully carrying out the Groffman tracing exercise while being timed.

Anticipatory Set:

- "We are going to do a little visualization exercise, so please follow along and relax your mind. Make sure you listen carefully to my descriptions."

- "I want you to all close your eyes and visualize a beautiful summer sky. This sky is blue as far as the eye can see, there are birds flying around, but other than that…nothing is in view except for the blue sky. You are lying down in the grass in a big field with lots of other spectators on either side. This is a family tradition each year that you take part in. Oregon's top stunt airplane pilots all get together and put on a show in the summer. This is your 10^{th} year participating. Here comes the first pilot. Except these are no ordinary pilots, or planes, they go so fast you can hardly see the stunts. You have to watch carefully and follow the jet stream to catch up to the plane."

- "The first plane flies out into view and does some great loop to loops and cork screws moves and stunts." (You can see the color of the plane easily…it is red)

- "Then, another plane flies out, this one appears to be blue. He too does loop to loops and cork screw moves and stunts except he is so precise that he does them right over the red planes jet stream."

- "Mean while, a yellow plane flies in from the other direction and does a different pattern, but crosses over the red and blue planes routes".

- "All three begin circling and are getting ready to do new patterns, except this time the are going to go at the same time and you have to tell which color plane took which route."

- "They all begin…the whole sky seems to be in a frenzy when all of a sudden they all stop and fly out in straight lines like a sunburst."

- "The crowd begins to discuss who was who. There is major debate. Luckily the jet streams remain for quite sometime. The problem is if you didn't pay attention to where each plane started and where they ended it is hard to retrace the steps or the jet stream."

- "When everyone has quieted down, a voice comes over the loud speaker and explains where each plane had flown. Some of the crowd stands up with hoots and hollers, for their following had been correct. Others are grumbling because there eyes hadn't been so keen."

- "Everyone starts to pack up there blankets and belongings. The day is over and you head back home…"

- "Now open your eyes…What you just did is actually a really good skill for your vision. It is important that you can take experiences, objects and people you have seen in real life and visualize a story, an experience or objects in your head. Visualization is a skill that uses your eyesight and your brain in a way that strengthens vision. These skills are essential for reading."

Learning Activity:

- "The other reason that we did this visualization is that the skill that you did in your visualization story, tracing or tracking, will be just like today's V.T. activity."

- "Today's V.T. activity is more like the second day's activity, when you had to count symbols, in that you will be practicing tracking movements with your eyes. However, this time there will be no counting, you have to follow a squiggly line from one end to the other."

- "For example, one of these three objects (show on the overhead) will be on the end side of the line that your eyes need to follow or trace. At the beginning is a number. Once you follow the line from the number to the end, you will know which # corresponds with which picture."

- "You must write it down next to the picture and move to the next line. The third line will be automatic due to the process of elimination." (Show example.)

Walk students through how to do this without moving their heads or tracing with a pencil or their finger. This is strictly just for using the eyes. After they find the answer, then they can trace it with a highlighter or pencil/pen to check their work. This step might not be necessary with older students.

Have them do a couple of easy practice ones in their seats with the overhead examples. Tell them to write down results and keep to themselves. Have them share with their neighbor.

Take questions and then have them get with their partner, get their folders and stop watches in 30 seconds. Tell them they may begin when they are ready.

Closure:

* Check for understanding and observe how the first run went. When students are all done come back and talk about observations on posture etc. Let students discuss how they think it with.

Graph results for day 5, week 1, put everything away and return to reading lesson.

Appendix O

Micro Lesson # 9

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd as appropriate.

Topic: Hart Chart, Dot the O's and at home reading

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.
- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction **TSWBAT** demonstrate their understanding of the various V.T. homework selections by walking through each of them together in class.

Learning Activity:

- "Today we are going to go over a few homework activities in vision therapy that I will be sending home."
- "Each week you will have your usual required at home reading. Except I have reduced it to 20 minutes out loud to an adult.
- "There will also be two V.T. activities, one called a 'Hart Chart' and another fun activity I call 'dot the O's'." (Which is where you dot the O's from a newspaper article)
- "Homework is essential for growth in V.T. as well as other academic subjects."
- "Behavioral Optometrist's who do vision therapy for students at their practices or with athletes, will always have their patients do homework. Really, the program cannot be successful unless the patients have a good attitude and keep up with their homework activities."
- "In all actuality the homework I am asking you to do may or may not be done at home. You could do some of it here if you have extra time. However, the reading needs to be done at home and out loud to an adult."
- "I know that before it was 100 min silently per week. I am changing it to give you more time to practice your out loud reading skills. Reading aloud is usually harder than reading silently. Also, it is good for your parents to have this time with you. You can read whatever you please. Do make it something that you are interested in and that is challenging enough for each of you."
- "There will be other activities that I will provide here at school that are good for training your eyes. They are things like word finds and mazes. They vary in difficulty and are definitely a challenge. Once you have gotten through quickly then start challenging yourself to do it without putting your wrist or forearm down on the desk and doing the whole thing with no wrong turns and under a set amount of time.

Next, pass out the Hart Chart hand out and read it through together. Ask for questions and do a timed, practice run. Students can get with their partner or neighbor at their seat. (Whichever the teacher prefers.)

All the directions are already typed up on the Hart Chart cover sheet, so repeating them is not necessary for this lesson. I would have a copy on the overhead and we would go through and talk about the directions, while giving examples as we read.

Afterwards, handout a photo copied article from the newspaper. Students will need to get out a marker of some kind. This marker will be what students use as they go through and scan the newspaper article. Every time a student comes to an "O" they are to put a dot in the center of it. This can be timed and it should be done in phases. 1st time through, students will time themselves and count their total. Students will see how many more tries it takes them to get the real total that is written on the whiteboard.

Remember: do not dot p's, b's, and d's ect. Make sure to be careful to only dot "O's." It is fine to dot zeros as well.

This really should be a fun one. My students really began to enjoy doing all of these test and were constantly challenging one another.

Have students do a trial or practice run on the sheet that was just handed out.

Explain to them that they will be handing in their V.T. homework to be checked off for completing homework for the week, however, it will not be graded.

Closure:

* Check for understanding and observe how the tests each went. When they are all done come back and talk about observations that they had as well as ones that I had.

Appendix P

Micro Lesson # 10

Vision Therapy in The Classroom

(Practical techniques for implementing into a reading program)

Grade: Any Grade is appropriate for this content however modifications in time and vocabulary may need to be adjusted for grade levels below 3rd as appropriate.

Topic: Overall body health and nutrition for optimal visual strength and performance

* This lesson will be taught at a Health lesson not at reading time.

* Information received for this lesson was taken from Darcy Rattazzi's Masters Thesis entitled: "Implementing Brain-Based Learning Theory In The Classroom."

Purpose/Goals:

- To integrate the health of ones body with how it performs in school by understanding and using vision therapy techniques, proper visual hygiene and brain based learning theory.
- To gain a new appreciation for vision and the profession of Optometry.
- To use vision therapy techniques and practices by training the eyes to work more efficiently while reading.
- To see improvement in reading ability and scores after 6 weeks of in class and at home training and practice.
- To integrate good habits for reading speed and accuracy across the curriculum.

Benchmarks:

(Health)

- Understand and analyze the relationships among nutrition, physical activity, psychological factors (such as stress) and personal hygiene and their effects on personal health and well being.
- Understand the influence, interdependence and impact of different body systems on health.
- Understand key concepts of growth and development and their relationships to lifetime wellness.
- Understand and apply strategies to improve and maintain individual, family, school and community health.

- Understand potential influence of environmental factors on personal and public health.

(Physical Education)

- Demonstrate knowledge of a variety of motor skills.

Student Objectives: After instruction **TSWBAT** demonstrate their understanding of the importance and impact overall health makes on the functioning of the brain and visual system by, participating in

Anticipatory Set:

Break students into 4's

Each student will have some kind of disability. Each group will have four bandannas that will hinder the wearer from being able to carry out certain objectives.

One bandanna will go over the eyes, the other will go over the mouth, another will tie the hands together, and finally the last, will tie the feet together.

I will have everyone perform two tasks.

The first, will not be possible if the eyes and the mouth are tied.

The Second, will not be possible if the feet and hands are tied together.

Have everyone take off their bandanas and take their seats.

Discuss how it felt when you wanted to do the activity but your disability got in the way or prevented you from doing what was asked.

- "How did it feel when you couldn't participate?"
- "Each of you should have been able to do part of the task but not all of it, right?"
- "Did anyone think to combine your gifts so that as a team you could still accomplish the goal?"
- "I want you to think about each of these bandannas as being a part of your body that isn't working because you didn't take care of it."
- "Today we are going to be talking about the health of your whole body and how it will have an affect performance on all sorts of tasks."

Learning Activity:

Pass out a graphic organizer that has three interlocking rings (Venn Diagram). The rings are labeled: Nutrition: Feed/Fuel, Exercise: Stimulate/On, and Sleep or Rest: Relax/Off.

- "During the discussion we will be practicing note taking by filling out the graphic organizer together on the overhead."

    - "The Brain and the Body work together."

(Write down this key thought on the organizer)

    - "How we teat one affects the other – i.e.: how we treat our body directly relates to the efficiency of our brain and it's learning capacity."

(Write down this key thought on the organizer)

    - "Lets talk for a minute about our eyes and vision. If vision is the process of getting meaning out of what has been seen (eyesight) and is the skill of understanding and integrating (the brain) what has been seen with the information that is also received through touch, hearing , taste, and smell, (other body systems) then our ability to do these things will seriously be impeded if we do not take care of our brains and the rest of our body."

(Write down definition of vision (paraphrase) under the Venn Diagram and draw arrows to show how all other systems help out the functioning of each other.)

1. Exercise:

    - "One way we can take care of our bodies is through **Exercise**. Exercise can be either a physical (large motor or small motor) or it may be a mental exercise (visualization)."

(Write down each key thought in the circle for Exercise.)

    - "Both physical and mental exercise affects our ability to learn and remember."

    - "By strengthening our muscles with exercise, we reduce the risk of injury; reduce stress; increase tissue memory; and strengthens communication between neurons."

    - "Movement, whether it is mental of physical, increases blood flow and in turn increases the amount of oxygen supplied to our brains."

    - "Movement helps to stimulate the inner ear and cerebellum which increases attention and equilibrium."

    - "When you exercise you need fuel or energy to replenish the body. Our bodies get this through eating food. The kind food we choose to eat can play a big role in how well our body responds."

- "You also need rest or sleep to rejuvenate your body after exercise or any kind of movement (any waking task).

2. Nutrition:
    - "In order to stay alive we must fuel or feed our body. That means food and drink (water)."
    - "The kind of food that we put into our bodies may actually keep us from growing and developing normally."
    - "The quality and quantity of food and water we consume will greatly impact how well we perform in every way."
    - "When the body is dehydrated, blood flow goes down providing the brain with less oxygen and raising salt levels. This causes a rise in blood pressure and overall stress on your organs."
    - "Caffeine is one food that actually removes water from the body."
    - "Lets look at the affects that different foods have on the brain alone."
    - "Different chemicals are made in our brains, and these chemicals each have a unique function. What we eat can increase or decrease the chemicals that are made."
    - "Foods high in protein make a chemical called tyrosine, which is a nutrient that our brain uses to make other chemicals called dopamine and norepinephrine. These affect how alert we are and how quickly we can think."
    - "Turkey and Carbohydrates supply another nutrient that is essential for the body to make serotonin. Serotonin is a chemical that makes us feel calm."
    - "Soybeans and eggs help boost neurotransmitters that are necessary for memory."
    - "Dairy products contain nutrients that help to cleans build up of proteins on places where neurons send signals throughout the brain."
    - "This is only a few of the ways in which what we eat affects our brain, let alone how it affects the other systems of our body."

3. Sleep and Rest:
    - "Our bodies need to eat, and be active but they also need to rest. Rest comes in several different ways. Taking a break is a form of rest, and so is blinking your eyes. However, the most obvious form of rest is to sleep."

- "Every person's body is programmed to want to take their rest breaks at different times. These are called cycles or rhythms. We all have times that our body is awake and attentive and is capable of concentrating."

- "We cannot always regulate or change our body's cycles, however, we can be aware of them."

- "Our bodies and especially our brains work on 90-110 minute rhythms with ups and downs. At the beginning of this rhythm, we are most focused, as the time goes on we find it harder to stay awake or focused."

- "Being aware of this helps us to know when we need a break. We already have learned how much our eyes need breaks, if we listen to our bodies and rest them when they need it, they will be charged and ready to go again. This is especially important at school. This is why I make sure to schedule in time for breaks. (And lots of different kinds too)

- "Sleep is the best kind of rest our body can have. It completely recharges us for the next day. Sleep also has patterns that run in cycles. Roughly 2 ½ hours after falling asleep, we begin REM sleep. This is where the part of the brain that processes intense emotions, and memories begin to work. This is where the brain takes short term information and terns it into long-term memories."

- "This means the stuff that you learn is consolidated through sleep. Or in other words it becomes locked in after proper sleep."

- "Without sleep our ability to remember things is paralyzed."

Closure:

As a way to check for understanding, students would take home an empty Venn diagram handout and do a sort of scavenger hunt by writing down how they do each of these things in a day to keep their bodies healthy.

This would open up conversations at home and reinforce the learning for the day.

Modifications/ Extensions/ Early Finishers:

Each teacher would need to evaluate what is appropriate for their own grade level. Some vocabulary would not be appropriate for the lower elementary grades.

- This can certainly be extended for TAG students, they could even investigate further and use correct chemical and scientific vocabulary.

Appendix Q

Pgs. 113 - 141
(Test packet - all test forms and checklists)

CONTINUOUS MOTION WORK SHEET

29 7 5 10 30 11 9 20 28 6 3 15 4 16 21 17 19 12 8 23 25 14 18 22

14

a b c d e f g h i j k l m n o p q r s t u v w x y z

mev jorn sewt gok gavy kur tob dilfur
zour minwt vohy nizurc opod seux cokil
foxi tolz kawoy vuros bab tigup nom
hals biet jawer moc zork tand sodet
dav galo zum derfran waf zowst dape
ques bif garbud duje dabad wexy dilns
cabet lauf miteg vibec foj dawd kloik
narh phag liguk fof repa danxy zerg

____Min. ____Se

nourn pewev nagik dois tofub zoc mirev
zid stouq nivog jelk ohoy dirf lopul
ghibt rurx noky sart wamt loc daxob
nujy zaw terk loip tefs erve srat phol
maew dur lepun tafoz tearp farg stib
uch dej skiqu kel gor soib fatiz laece
dunb holf beod gaim zive lekaw finy
dech noxeb dirp phyleg afte ozip lum

____Min. ____S

18

a b c d e f g h i j k l m n o p q r s t u v w x y z

Denaf xoth towrb. Ripig colk muhs durst. Kinj ghol quemp. Wof kisn yut lavok ums bagz roth. Awn tims purc jurf. Vox knep raloy. Sud tfem cawb ary ginch ved trow sagh. Ixep, tufb egh quelb afd. Mikzar stey. Cif malk nuge cade kich axy. Nool levib neap chim kep. Beaw rotox. Lof ghonk dij. Udty mach der. Zush legif bon vaik

____Min. ____Sec.

Opk diz tams. Ejy melub ofg puch niv. Tyng dirs mup hylo quext. Ikn zolf kaw rumic. Bots tasg uny lubah omp sirt adf roje. Num pov keps. Zabe urc quof sute blem. Phac und begr waxf. Kach foge tehy drep ziws buiq. Vak ixw braj. Yev muze ifh. Dles gac tenk blam eng dilc. Fulpp chov knag owd kerex tfar. Meni sacy phio zad stob

____Min. ____Sec.

a b c d e f g h i j k l m n o p q r s t u v w x y z

37

Arom bixto. Heen dolk roche hekis
tuv yiho koder quop frittin phox. Qull
gump burs chom maj yaril trun jub naboy
zaw boken lete. Naden bom razew nush
harb tufid. Zoy cate gud gult. Pamel gues
quim flek remb caw. Dil sauf delm gaton.
Fliz bluke jeg bol nime hovic pidar mok
newek dep tane frax. Basy curit loid zarimp. ____Min. ____Sec.

Hokil fotok dican kolm boft koof
vint cosk lupol hidrom tren. Fich paj rogun.
Joz thivar tol kub brak. Blost jaune. Yumb
neks baft culen rive medot fage antar baid.
Thove pitet guik yarb. Quez guat fey lig
dague brical sive habod kwin toef.
Plech guidel naxal kove wirn dag.
Bant frixen jemp phoy bazone kelf. ____Min. ____Sec.

Elage ofo tirbil hox. Cish suldot
quimp velit poz hifur togu. Quont thurp bast
nin boum jary dokab. Pud rone plage fud
bant mos dafer gurb. Fain vist gake froid
sephar treg guve quev guiz thrach fesce.
Vima knep botz houl waven mibold goom
jame. Woegil nohl parik bis hoxed
tullis mek gimey. Viden rozel beur. ____Min. ____Sec.

40 a b c d e f g h i j k l m n o p q r s t u v w x y z

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tinv kosc. Lopul mordih nert chif paj
nurog zoj thivar. Olt buk karb stolb nauje.
Bumy sken fabt nulec. Vire dotem geaf
ranat daib voeth tiept kuig bary quez.
Guat yef gil gaude calirb vies daboh niwk
foet chelp. Delgue laxan voke nirw gad.
Tanb nexirf pemj yoph mozeba felk. ____Min. ____Sec.

Geale foo librit hox sich. Todlus
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tasb nin moub yarj bakod dup noer gelap
duf tanb som ferad. Brug naif stiv keag.
Droif raphes gret vuge quev zuig charth
scefe. Maiv penk. Zobt louh nevaw dolbim
mogo maje gilowe. Holn kirap sib dexho
stilul kem megiy nived lezor reub. ____Min. ____Sec.

Himz kolle dunth nacke hórb kily.
Cith pyl mofod kuh ther nurvik dit lazop
juf. Gulo phots taj panil rok doj brux.
Kalb neb metar tobe. Pord api wens suh
terbod gaiw reaz bis duig. Tympes galue
quez lers kugi zalc wod snote. Dowil geb
kunch nim morb. Lavih dran wilk romop.
Nefag gurf nexap morc mayed lozorf geeb. ____Min. ____Sec.

51

a b c d e f g h i j k l m n o p q r s t u v w x y z

Himz lolek thund. Kance broh yilk tich lyp fodom huk reth kipurn tid. Pozal fuj loug stoph. Jat linap kor jod brux klab neb artem ebot dorp ipa Snew hus. Dobert waig zear sib. Guid sympet lague quez serl guik claz dow eston. Liwod geb knuch min borm havil. Nard kwil pomor gafen furg panex crom dayem frozol beeg.

Min___ Sec___

Nage huft koben tive clus prosid nirp tuil. Quesp puy fron. Guim quoy bakap joat kurot athur. Julk tain dus joft kear neel tro nept smoser. Abic travin raph corab gers fize mib. Pute queth fet greem gule. Salm kag miel citad nue. Woch vido belom mims warg caiz berf nam drexen. Kir kalt baphy guper sohn periz sund.

Min___ Sec___

Narg rek koh mool. Sobe ohn cetl mot. Pok dul oth riep lok thon pirf. Uhl palk ruaq ugb lirk bhar tquo. Quak rilt beld tob tuj bop tak deod upt. Deh nop nulc bot nuad cerm buh fwuh daj quat narc teub vaf iod. Arj pade zug quif mulg twur. Luge mise kicgu pah blik tubil velc dalm. Olp kwec fexam pogs yac gane quez firg pemj.

Min___ Sec___

Neag doly soth def reb. Pholk toce nuph xil poud ghir kelm folt sinok mouq. Gan quaz kuj obq phat sobk lirp. Cneb nons nej roken. Afd telp bumf rus faut. Zune tavs dhou teer yaph sheg ild queft muig dirf buc. Daug galn vose. Fhac pevit laun ebid aly onc noveh bilm yon. Mawr nial neph gulc oxierf pemj byon jrat blezum.

Min___ Sec___

60

a b c d e f g h i j k l m n o p q r s t u v w x y z

Lup stewt kog vagy. Wiz bota flid ru wim hovy cruzin .lo,o exus. Klic stoy foix zolt waky sruv bab pugit mon. Vup slah ibet wajer com kroz. Dant teds. Quoy vad logo muz frander faw stowz pade kich ques. Bif frag jud. Ad yex chiz slind tebac ufal getim bivec. Jof dward deb koil harn gaph kugil. Fot aper jus xandy grez bem.

Min___Sec___

Vewp kigan soid. Boft cuz vorim yox. Diz quost mups govin klej hoy frid lapol bight rux kony tras mawt. Col fud bidax. Juny waz kert poil seft heg rast. Loph wame rud nupel. Zofat apert graf zyl bist huc jerd. Quisk mek. Rog bois zitaf cela bund floh dobe maig. Vize pof wakel yin ched bexon kas prid glyph. Afte ozip mul.

Min___Sec___

Lin koach. Vie mond. Bezy pight rean thuz rimp corun fid kost eglin tym foll stix. Mon suar baz nuit gahul. Bram tews ristor. Jupe kanoy dusen zov elea tarx doch gumb thur fres eart. Neg rouf bav sper tique jowk. Ghad blume wref lig disa buc. Yeth foub. Dey hopen kavi nelow gik beap nad cent brex tari yeber alf bitz.

Min___Sec___

Gok plad yets blom hin cruz waift mip. Doxon surp lym. Fow tepik hulg valz bux foup kric snogh wat quos. Yem irpal tus jave. Bok dunt coloze chep. Myt grus nabe zrub fod varet bicet waul rask spuf tir quech. Dag foid kov leben. Hac tural exog smid kitch laque jod aven fibel wogat hegil dax. Lebay mof kopen zintar.

Min___Sec___

Afend thox browt gipir kloc. Shum strud jink. Iogh quemp fow nisk tuy koval mus gabz thro. Naw smit crup fruj vox penk yolar dus meft bawc. Yar ching dev wrot ghas pixe buft heg quelb daf razkim stey. Fic kalm gune. Dace kich yax lono bivel apen mich pek wabe. Oxtor fol knogh jid tudy cham. Erd shuz figel nob kovi.

Min___Sec___

Pok zid smat jey blume gof chup vin gynt sird pum lohy quext. Nik floz wak cimur. Stob gast yun habul pom. Tris dof ojer mun vop spek. Baze ruc quof tues lemb pach nud gerb fawx chak. Gofe hyte perd swiz. Quib kav wix jarb. Vey zume hif seld cag knet malb gen clid pflup voch. Kang wod exerk traf nime casy hoip daz bost.

Min___Sec___

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HOME SACCADIC FIXATIONS - B

Instructions:

Count the number of symbols in each line. Record this number at the end of each line. Also, record how many seconds it takes to do each line. Use only your eyes as you count (no finger or head movement).

Check one: _____ Patch Right Eye _____ Patch Left Eye _____Switch patch from one eye to the other after every line

	# of symbols	Seconds
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Family Vision Centers
College of Optometry — Pacific University
Vision Therapy Services

HOME SACCADIC FIXATIONS - A

Instructions:

Count the number of symbols in each line. Record this number at the end of each line. Also, record how many seconds it takes to do each line. Use only your eyes as you count (no finger or head movement).

Check one: _____ Patch Right Eye _____ Patch Left Eye _____Switch patch from one eye to the other after every line

	# of symbols	Seconds
& &&& & &&& && &&&	_____	_____
& && &&&& & && &&&&&	_____	_____
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&& &&& & && &&& &&&& & && && &	_____	_____
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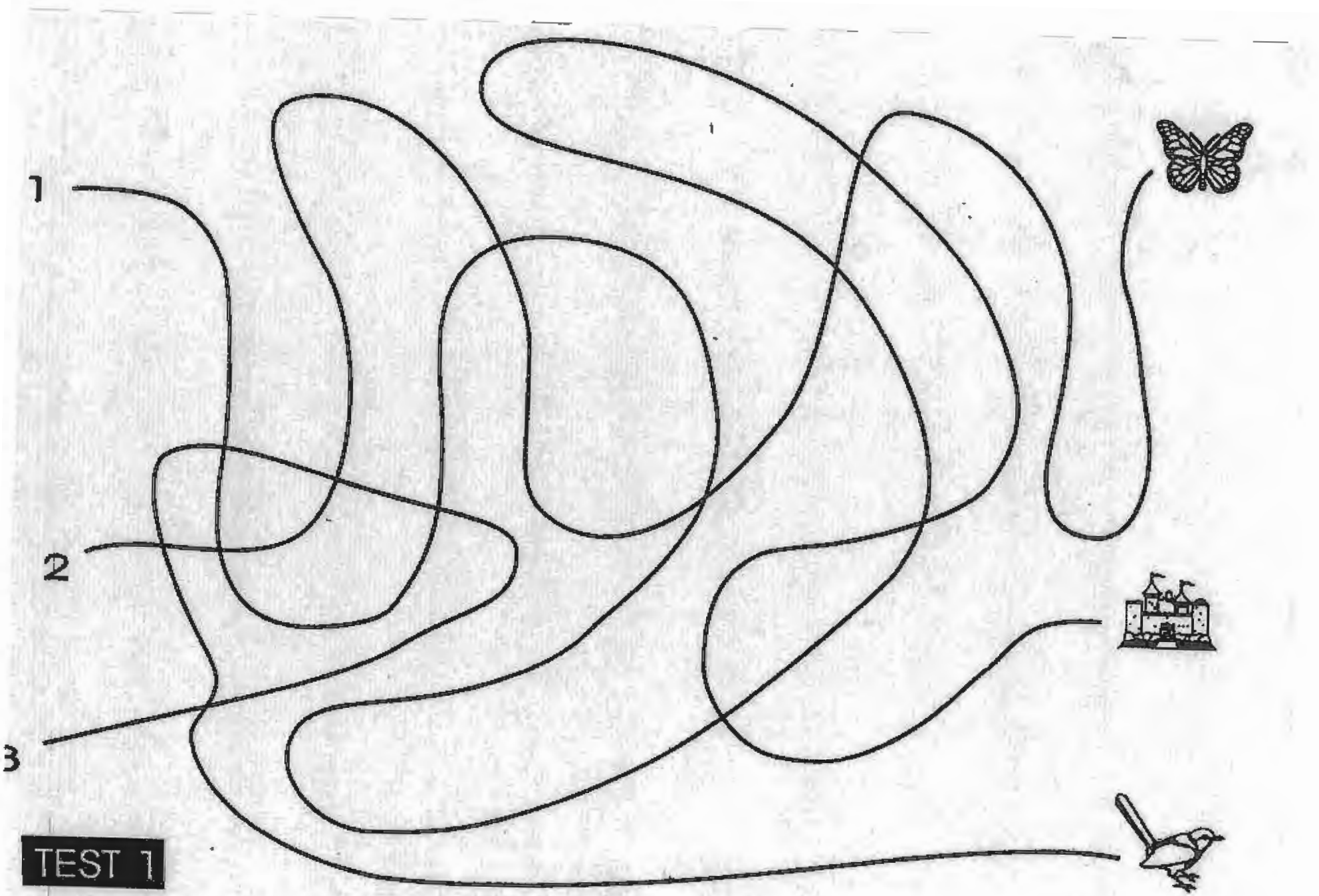
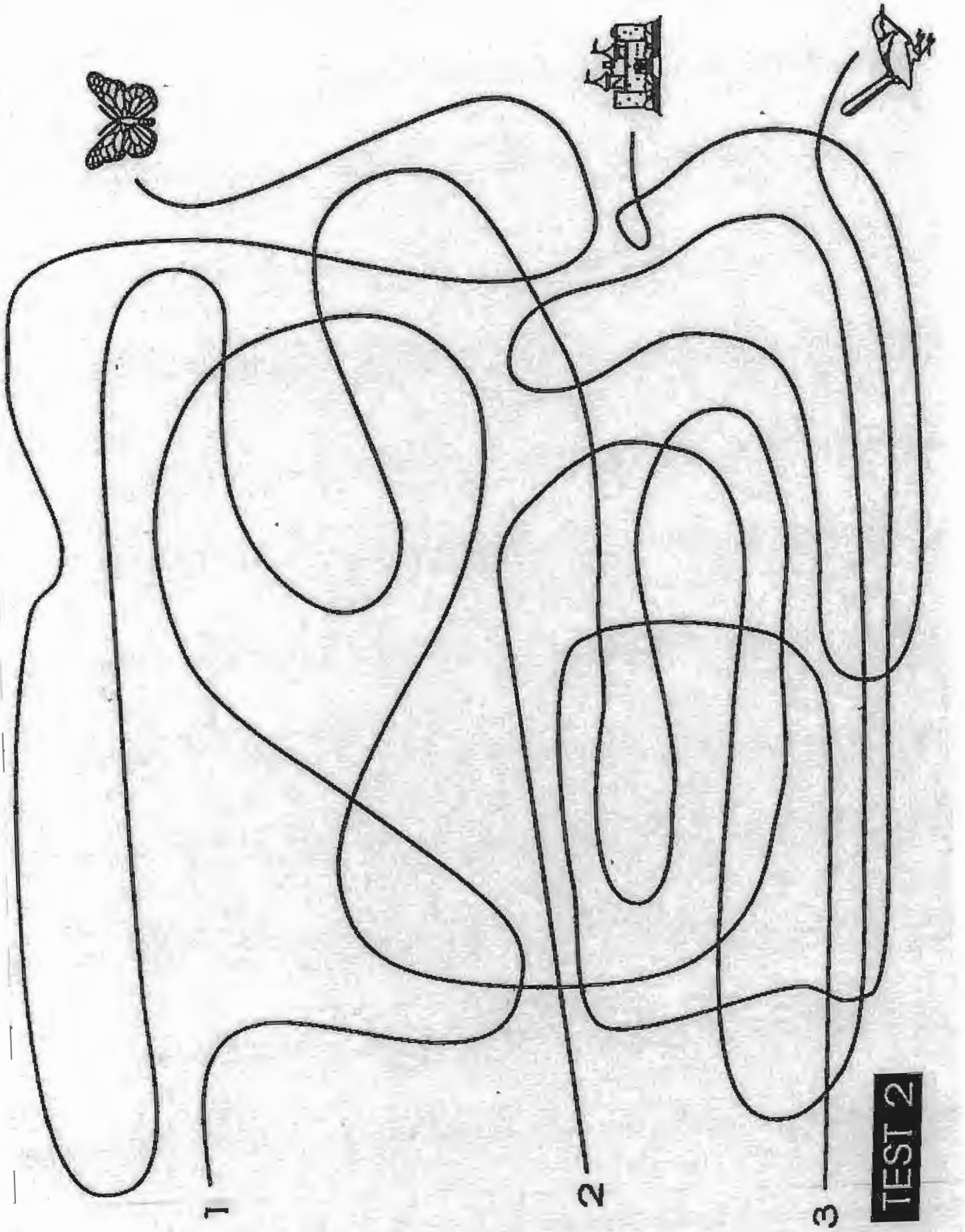
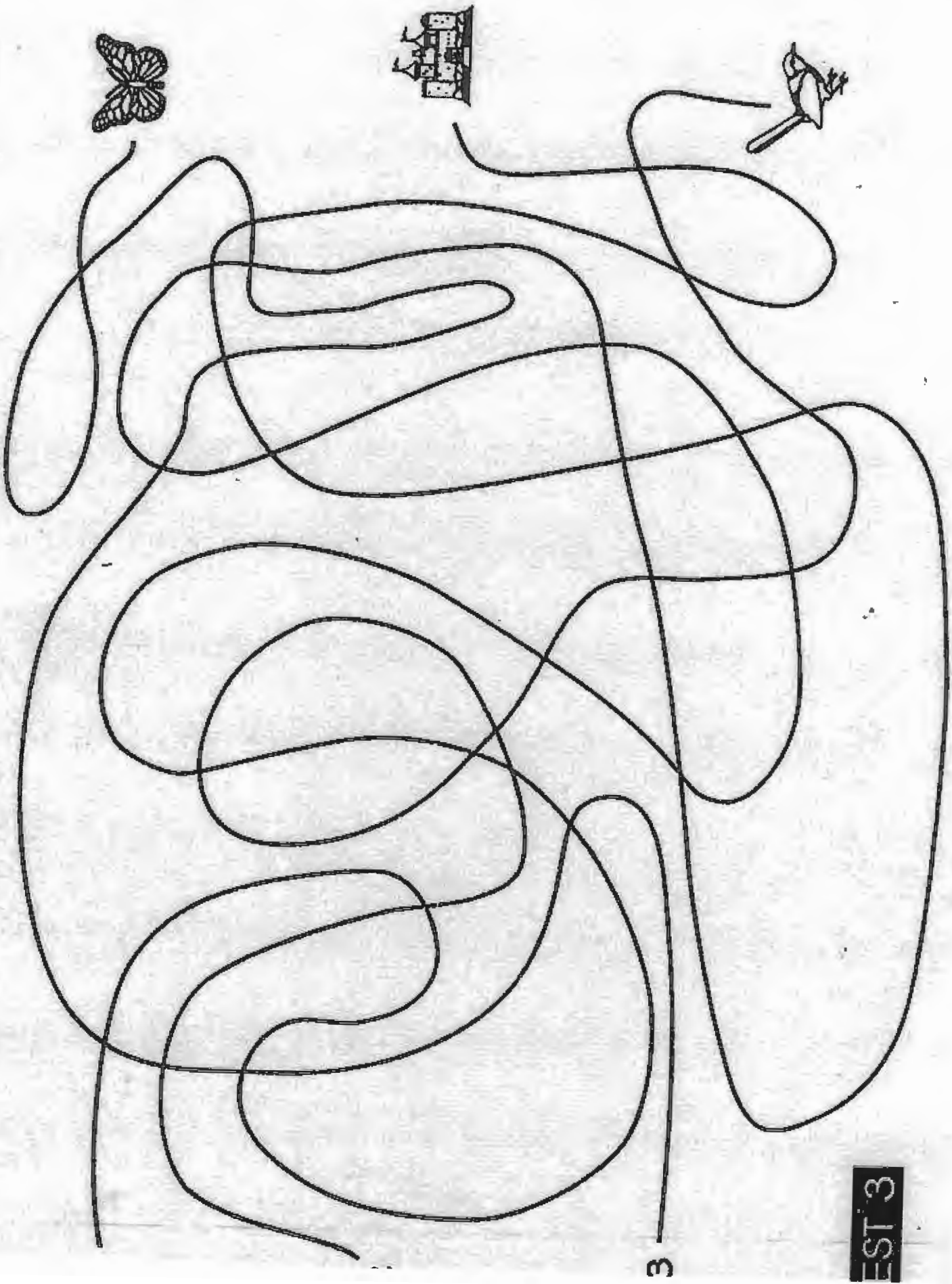
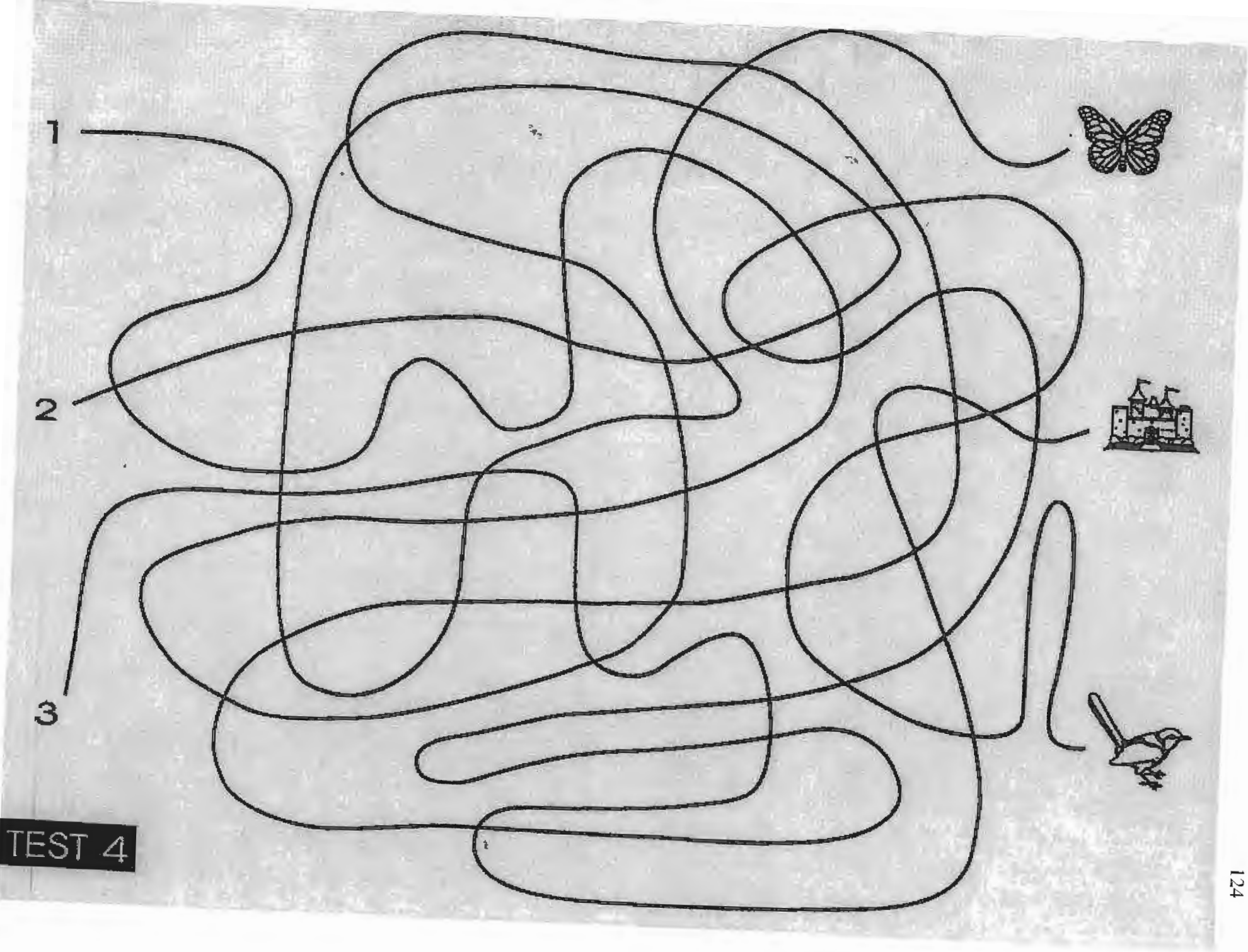


TEST 1


1
2
3
TEST 2

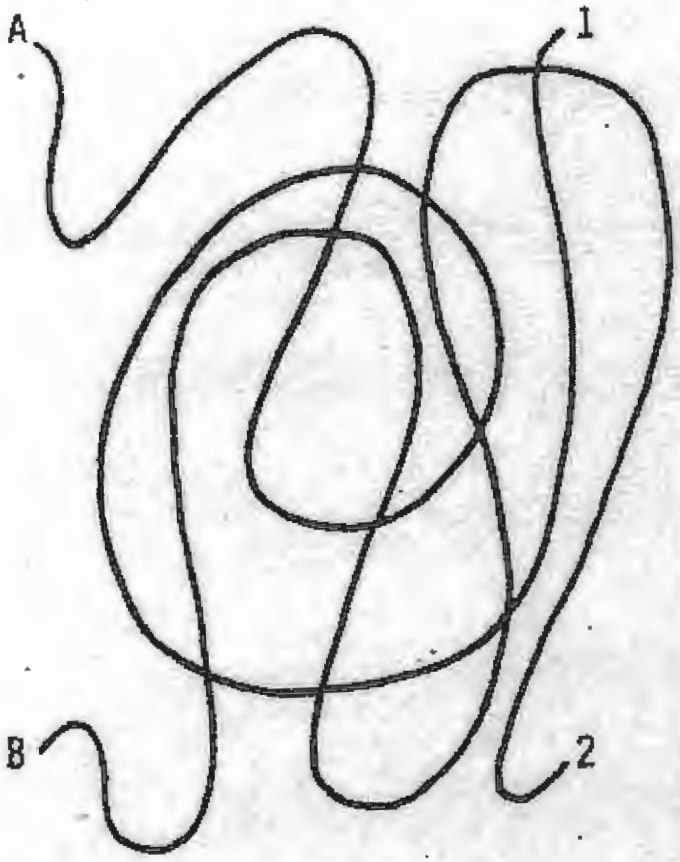


TEST 3

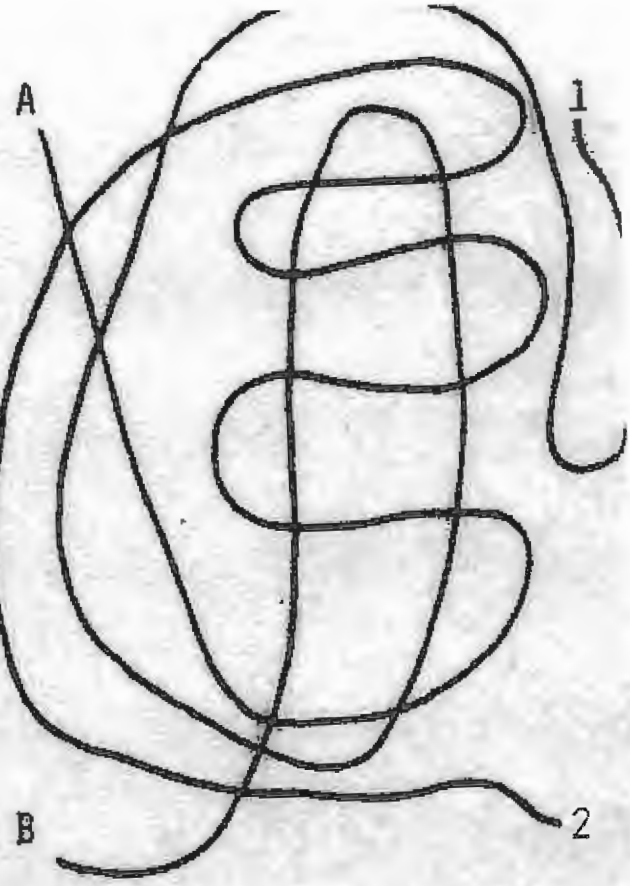


TEST 4

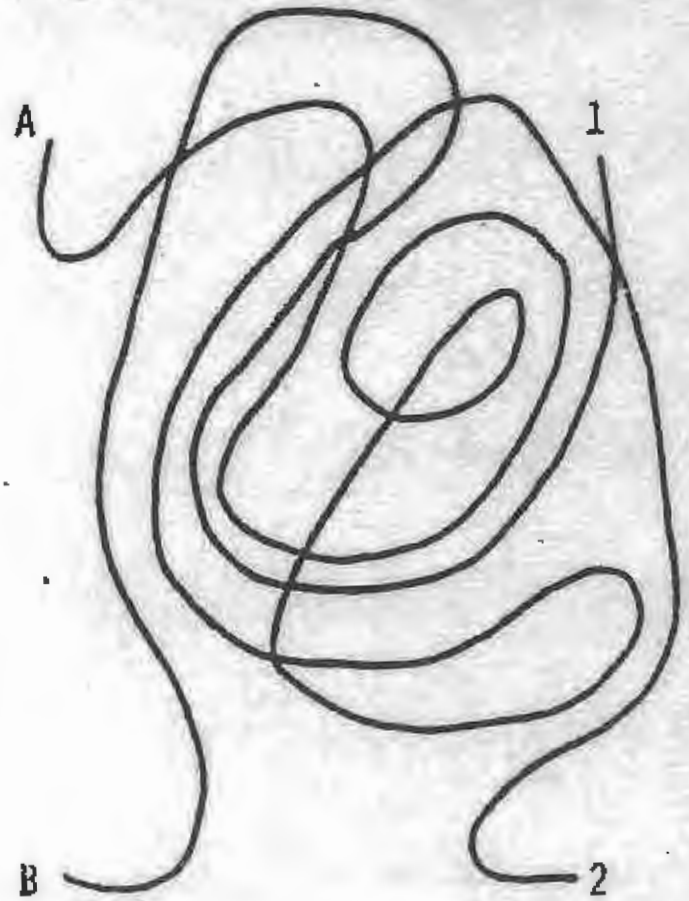
TEST 5

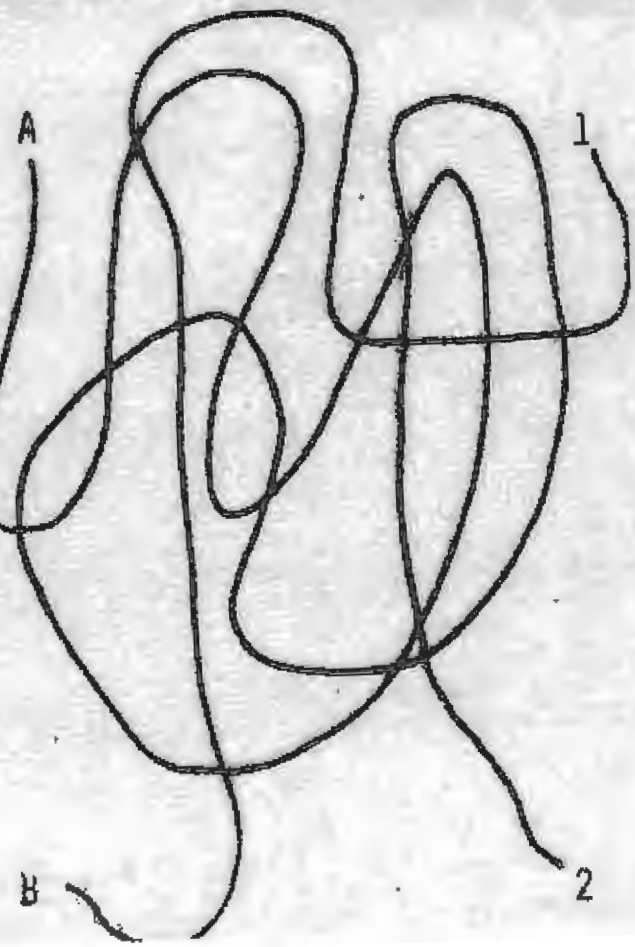


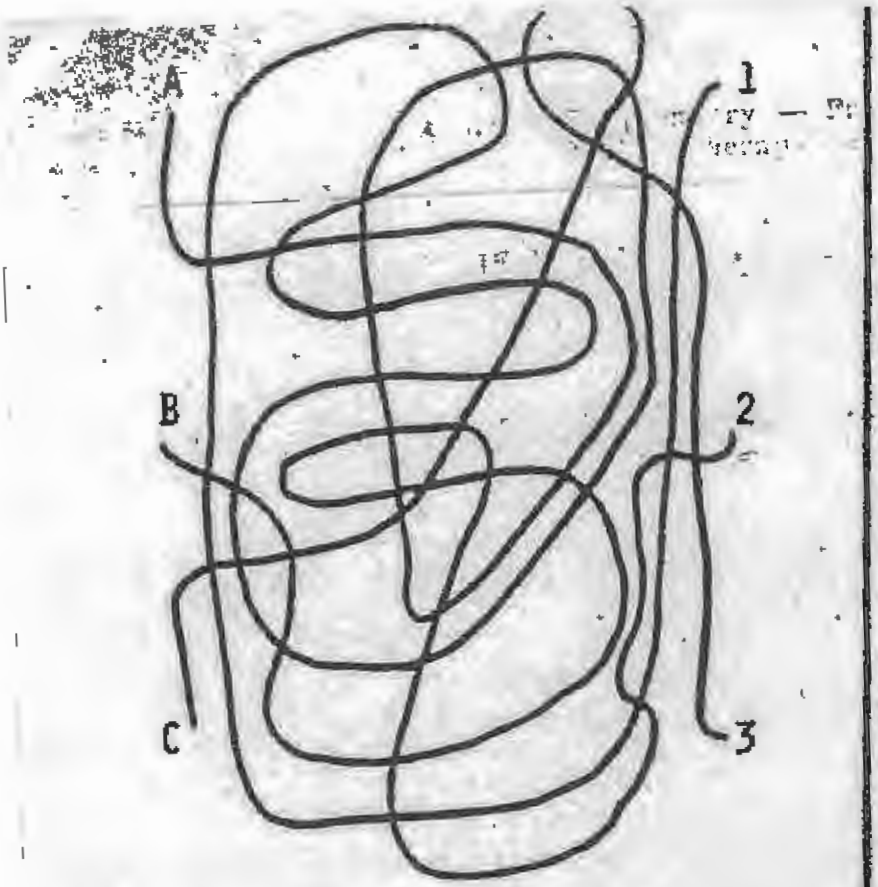
A - 13 ____ MIN ____ SEC



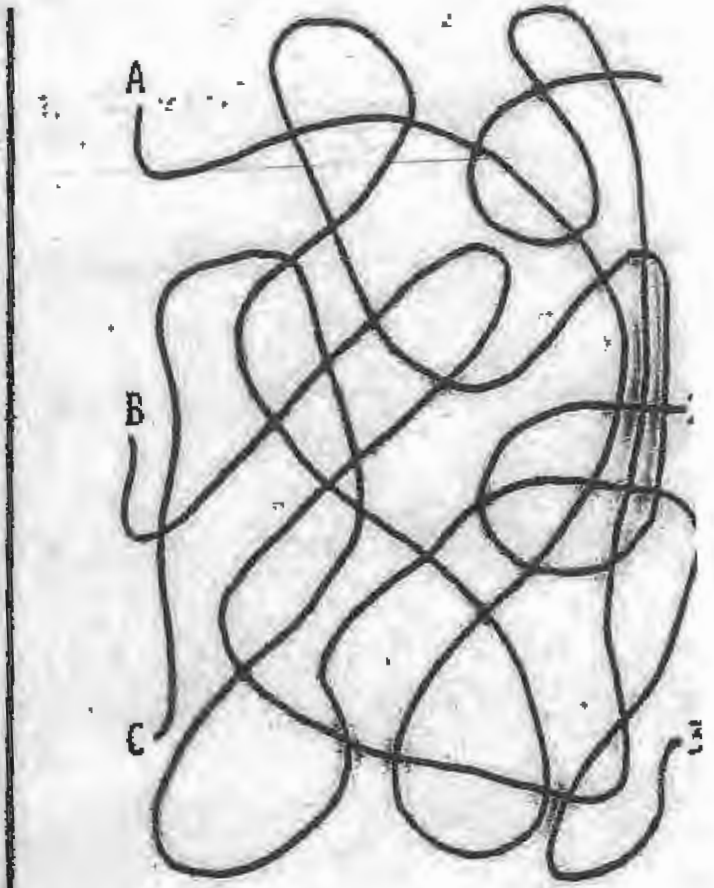
A - 14 ____ MIN ____ SEC



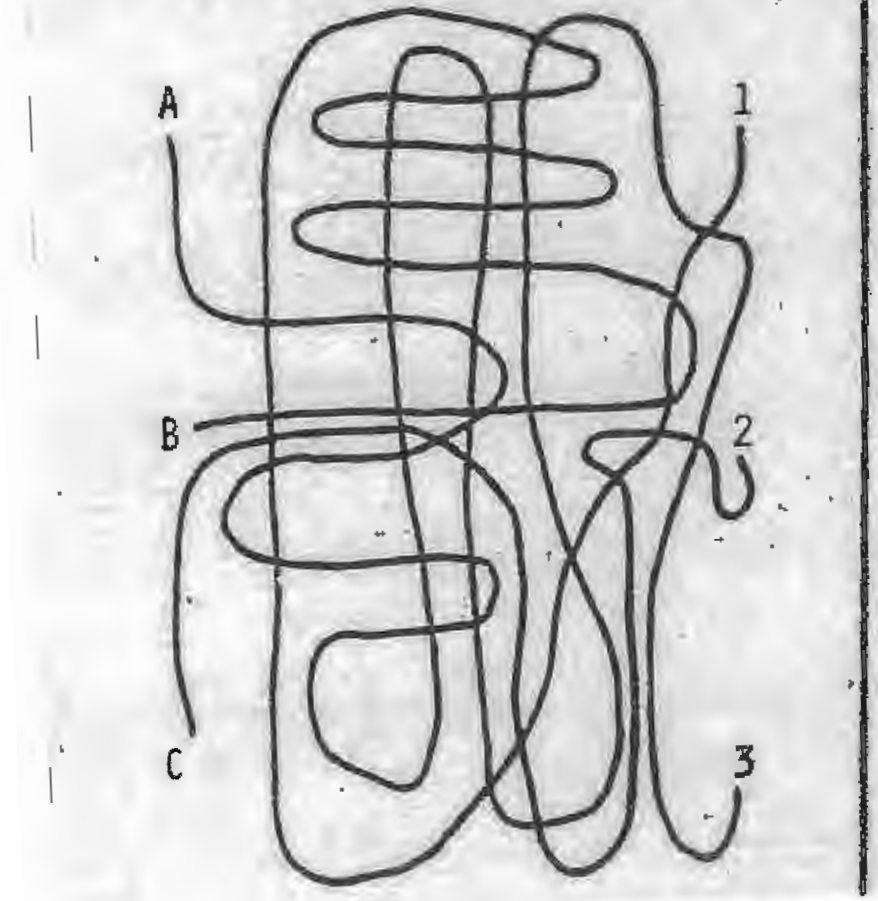


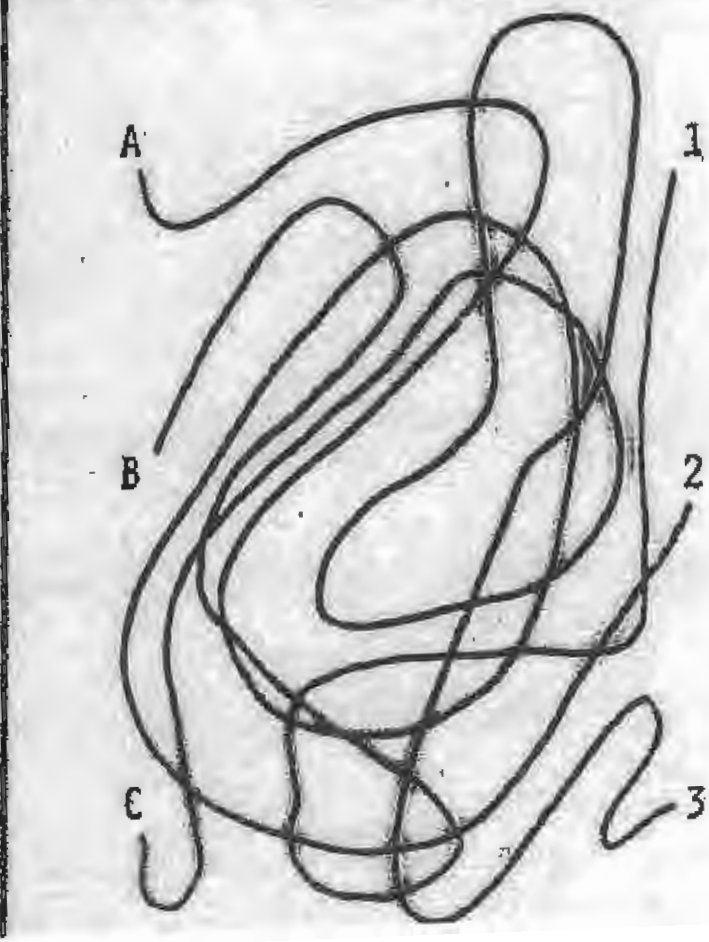


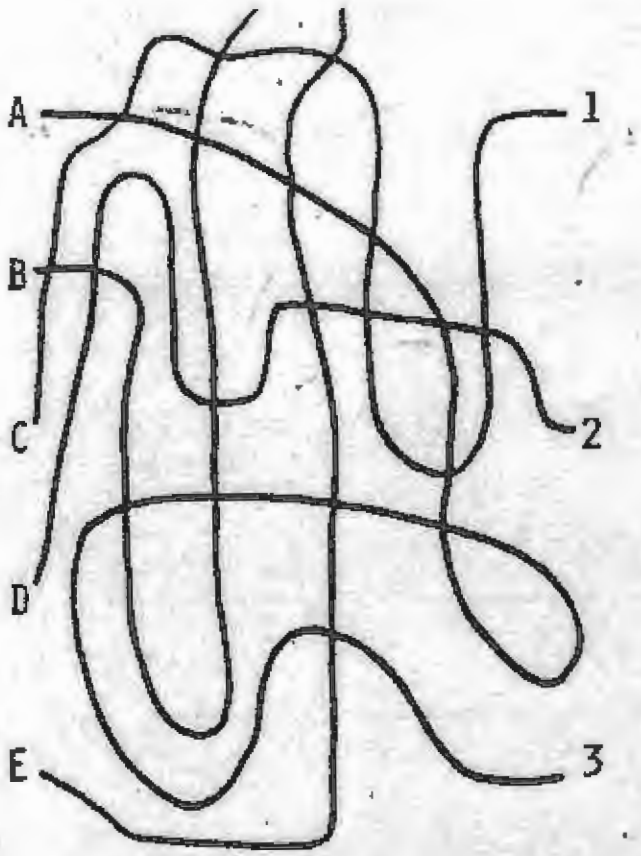
C - 17 ____ Min ____ Sec



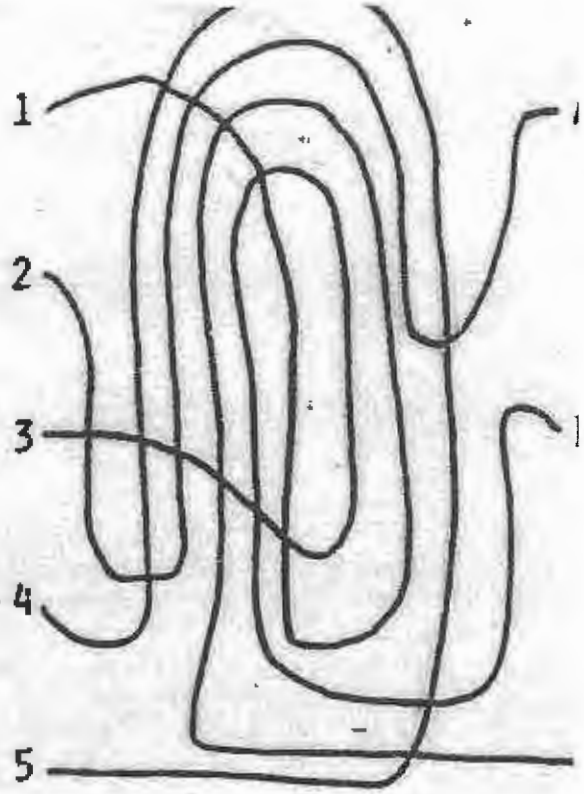
C - 18 ____ Min ____ S



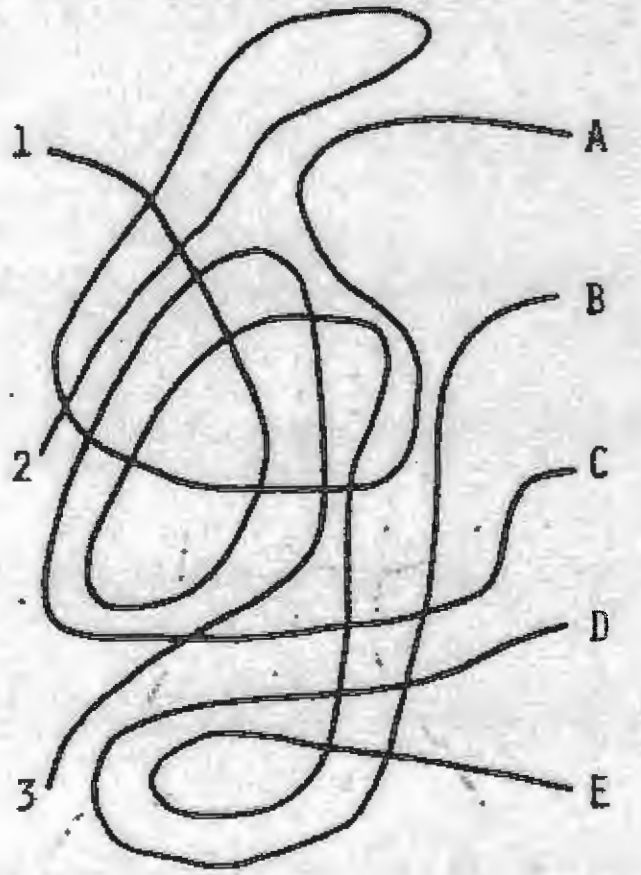


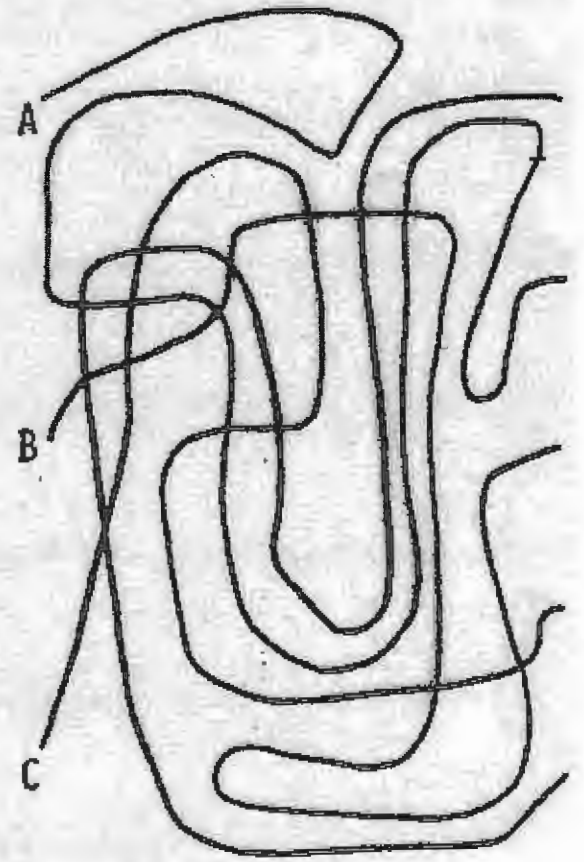


D - 57 MIN SEC



D - 58 MIN





For the horizontally arranged letters, draw a continuous line (without stopping) above the t's and below the o's. For the vertically aligned letters, draw the line to the right of the t's and to the left of the o's.

t t t t o o o o t t t t o o o o t t t t o o o o o t t t t o o o o o t t t o o t t t t

o o o o o o t t t o o o o o t t o o o t t o o t t t t o o o t t t t o o o o t t t t o

t t t o o o t t t o o o t t t o o o o t t t t t o o o o o o t t t o o o t t t o o t t t

o o o o o t t t o o o o t t t t o o o o o t t t t o o o o o o t t t t o o t t t t o o

t t t t o o o o o o o t t t o o t t t o o o o o t t o o o t t t t o o o t t o o t t t o

t	o	t	o	t	o	t	o	t
t	o	t	o	t	o	t	o	t
t	o	t	t	t	t	t	o	t
o	t	t	t	t	t	t	t	t
o	t	o	t	o	t	o	t	o
o	o	o	o	o	t	o	t	o
o	o	o	o	o	o	o	o	t
o	o	t	o	t	o	t	o	t
t	t	t	t	t	o	t	o	t
t	t	o	t	t	t	o	o	o
o	t	o	o	o	t	o	t	o
o	o	o	o	o	t	o	t	t
o	o	t	o	o	t	o	o	t
t	o	t	t	o	o	t	o	o
t	o	o	t	t	o	t	o	o
o	o	o	t	t	t	t	t	o
o	t	o	t	t	t	t	t	t
o	t	o	o	o	t	o	o	t

o o o o t t t o o o t t t t o o t t t o o o o t t o o o o t t t t o o o t t t o o o o

o o o o o t t t t o o o o t t t . t o o o o t t t t o o o t t o o o t t t o o t t o o o o

t t o o o o t t t t o o t t t o o o o t t o o o t t t o o o o o t t o o o t o o o o

o o o t t o o t t t o o o o t t t t t o o o t t o o o o t t t o o o o t t t t o o o o

t t t o o o t t t o o o o t t t t o o o t t t t o o o o o t t o t t t t o o o t t t

o o o o o t t t o o o o o t t t t o o o t t t o t t t o o o o t t o o o o o t o o o o

t t o o o o t t t t o t t t o o o o t t o o o t t t o o o t o o o t o o o o

o o o t t o o t t t o o o o t t t t t o o o t t o o o o t t t o o o o t t t t o o o o

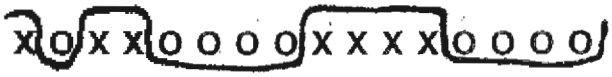
t t t o o o t t t o o o o t t t t o o o t t t t o o o o o t t o t t t t o o o t t t

o	t	o	o	o	t	o	o	t

Family Vision Centers
College of Optometry — Pacific University
Vision Therapy Services

EYE-HAND CONTROL AND FINE MOTOR COORDINATION

ith a pencil held in such a fashion that only the point is touching the paper (no part of the hand to ıch), a continuous line is drawn over all X's and under all O's in each line (example below). e the preferred hand. Be careful to draw the line in such a way that it does not touch any of the ters.



. X X X X X O O O O O O X X X X X O O O O O O X X X O O O X X X

. X O O O O O O X X X X X X X O O O O O O O X X O O O X X X X

. X X O O O O O O X X X X X X X O O O O O O X X O O O X X X X X

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. X X X X O O O O O O X X X X O O O O O O O X X X X X X O O O X X

. O O O O O O X X X X X X X X O O O O O O O X X X X X O O O X X X

. O X X X X X O O O O O X X X X O X O O O O O X X X X O O O X X

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. O O O X X X X X O O O X X O O O O O O X X X O O O O X X X X X

). O O O O X X X X X O O X X O O O O O O X X X X X O O O X X X O

1. O O O X X X O O O X X X X X X O X O O O O O X X O O X X O O X

2. X X X O O X X O O O O X X X X O X O O O O O X X O O X X X O O

3. X X X O O O X X O O O X X X X O X O O O O O X O X X X O O O X

4. X X O O O X X O O O X X X X X O X O O O O O X X X X O O O X X

5. O O X X X O O O O O X X X X X X O X O O O O O X X X X X X X O O

6. O O O X X X O O O X X X X X X O X O O O O O X X X O O O X X X

7. X X X X O O O O O X X X X O O O O O O X X X X X X O O O O X X X X

8. X X O O X X O O X X O O X X O O X X O O X X O O X X O O X X X

O F N P V D T C H E
Y B A K O E Z L R X
E T H W F M B K A P
B X F R T O S M V C
R A D V S X P E T O
M P O E A N C B K F
C R G D B K E P M A
F X P S M A R D L G
T M U A X S O G P B
H O S N C T K U Z L

Pin #:_____

Hart Chart Homework

Purpose: The purpose of the Hart chart is to improve the saccadic eye movements of the student. Saccadic eye movement are the jerky, back and forth movements that the eye does. These movements are critical for reading, and the Hart chart allows the student to practice jumping back and forth between multiple columns of letters, challenging their accuracy and improving overall eye movement skills.

Goals: There are two goals of the Hart chart, the first is accuracy and the second is increasing speed. The first goal is to get through the entire ten rows of letters without any mistakes. Only after the student has performed this part, can the student try to improve speed.

Grading: The letters below are the letters found on the Hart chart. They are in the order that the student should be saying them. Starting with the column on the far left the student says the first letter (O), then jumps to the column on the far right and reads the top letter (E), then jumps back to the column on the far left reading the letter just below the top letter (Y). This is done till the student gets to the bottom of the two outside columns, then they shift to the next two columns on the inside starting with, on the left (F) and on the right (H). They proceed to read down these two columns just like the last two until they get to the bottom, then jump to the third columns in from the left and the right starting with (N) and (C) respectively and so on till they have done all 10 columns.

The student can not use any fingers or pencil to guide them, this is an eye test and only the eyes may be used, also avoid head movements. We are trying to train the eyes to do the moving, not with the aid of the head. The parents job is to mark a line through any letters that are skipped, said wrong, or said more then once. Keep track of the number of errors, and after two weeks, I will send home a new chart with smaller letters (same directions as with this chart). Good luck and have fun with this. It should be a challenge, but not impossible. If you get frustrated, take a 20 minute break and try again. It takes practice, just like anything else.

Timing students during this exercise is optional. However, it will help parents and students to see improvements.

O E Y X E P B C R O M F C A F G T B H L -- F H B R T A X V A T P K
R M X L M P O Z -- N C A L H K F M D E O B G P P D U G S U -- P T
K Z W B R S V P E C D E S R A O N K -- V D O E F M T O S X A N B
K M A X S C T

_____ Errors _____:_____ Time (if measured)

By DAVE HOGAN
THE OREGONIAN

SALEM — Since Jan. 1, lobbyists have given House Speaker Karen Minnis, R-Wood Village, about $19,000 in campaign money.

About $17,000 has gone to Rep. Tim Knopp, R-Bend, who heads the committee reforming the Public Employee Retirement System.

And the House chairman charged with overhauling the Oregon Health Plan, Rep. Ben Westlund, R-Bend, has received more than $12,000.

The largest sum — more than $276,000 — flowed to Gov. Ted Kulongoski, a Democrat, to help pay for inaugural festivities held around the state.

All this comes even though most Oregon legislators, and the new governor, have said they will continue to follow a ban on political contributions during legislative sessions. The Watergate-era state law was declared unconstitutional in 2001, but most lawmakers at the time pledged to continue complying with the ban.

They even adopted a new rule requiring a two-day disclosure of donations after Jan. 1, and no legislator reported any contributions during the 2001 Legislature, nor did then-Gov. John Kitzhaber.

But where the old law prohibited contributions after Jan. 1, this year legislators and Kulongoski have accepted more than $500,000 since Jan. 1, according to an analysis by The Oregonian.

The reason for the flurry of contributions is fairly simple.

After the new House leadership was announced in December, lobbyists — who also promise to refrain from contributions during the session — hurried to get their donations to key legislators before the Legislature opened Jan. 13. Senate leaders weren't selected until after the session convened because of the tied 15-15 party split.

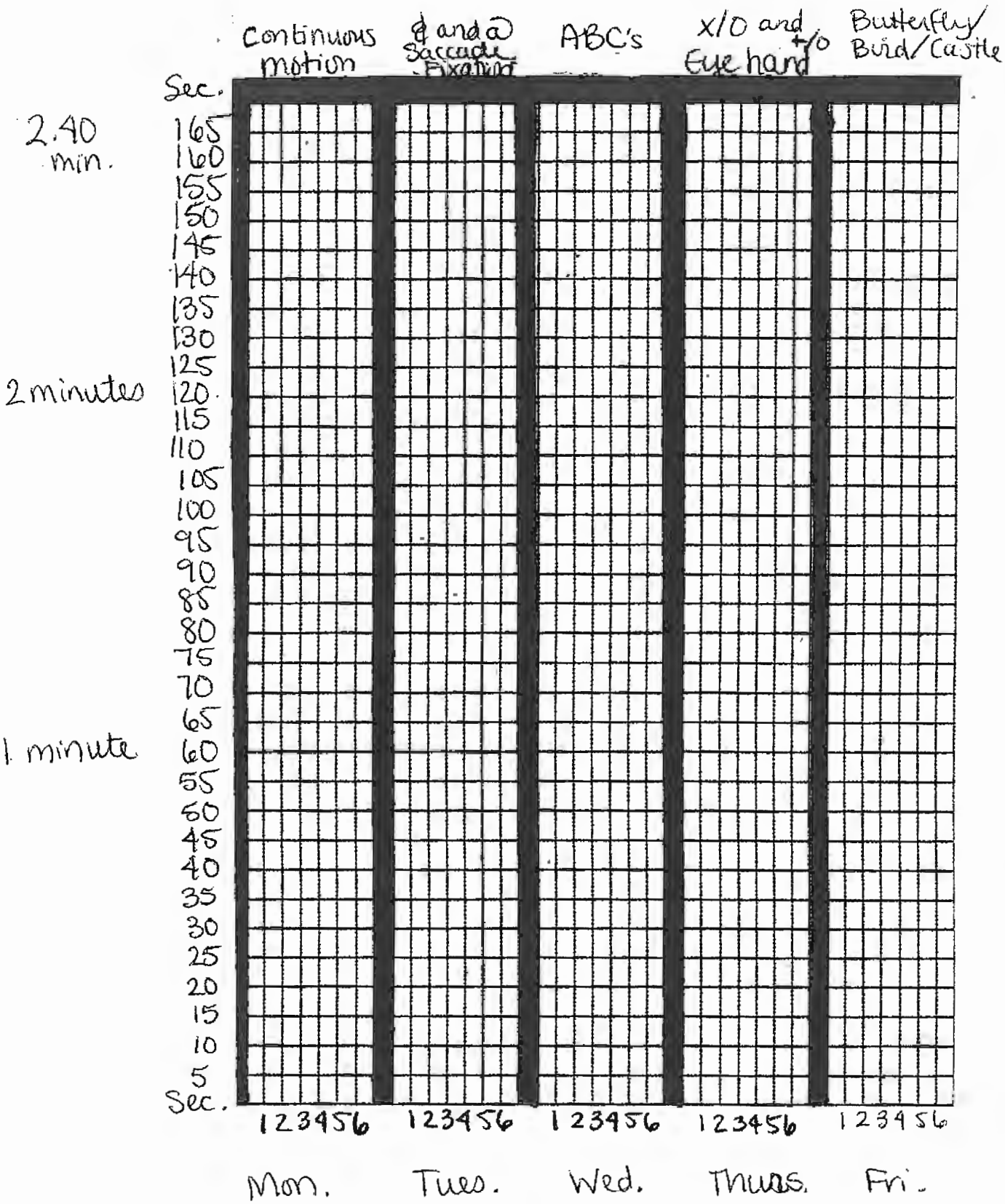
Contributions mostly came from corporations, unions, political action committees and associations.

"It's not from Joe Smith on the street," said Andi Miller, executive director of Common Cause Oregon, adding that members of both parties received the money.

But this year there were two catches.

First, many lawmakers saying they will honor the ban while in session considered that to mean Jan. 13, so they continued accepting donations until then.

Second, some of the contributions —



Teacher comments:

Pin # _____

Developmental Eye Movement Test
(DEM)

Intern: Ryan LeBreton Patient's Name: 11294

O.D.: _____ DOB/C.A.: 06/12/91 / 11.11

Test Date: 04/29/03

TEST A:

3759825746147637 9392

4521753748746529 2364 Time/Errors 14.87 Ø

TEST B:

6329174652537 4845217

7939214763257 4637598 Time/Errors 14.53 Ø

TEST A + TEST B: Vertical Time/Errors 29.40 Ø

TEST C:

37598	63291
25746	74652
14763	53748
79392	45217
45217	79392
53748	14763
74652	25746
92364	37598

Head movements

Horizontal Time/Errors 33.40 Ø

	Raw Score	Std. Score	% Rank	Age Equiv.
Vertical time				
Horizontal time				
Ratio				
Errors				

Seventh Edition

BASIC READING INVENTORY PERFORMANCE BOOKLET

A Oral Reading

Jerry L. Johns
Northern Illinois University

Student _____ Grade _____ Sex M F Date of Test _____

School _____ Examiner _____ Date of Birth _____

Address _____ Current Book/Level _____ Age _____

SUMMARY OF STUDENT'S READING PERFORMANCE

Grade	Word Recognition: Isolation (Word Lists) Sight	Analysis	Total	Level	Word Recognition: Context (Passages) Miscues	Level	Comprehension: Oral Reading Form A Questions Missed	Level	Comprehension: Silent Reading Form B Questions Missed	Level
PP										
P										
1										
2										
3										
4										
5										
6										
7										
8										
9					ESTIMATE OF READING LEVELS					
10										
11										
12					Independent _____ Instructional _____ Frustration _____					

LISTENING LEVEL

Grade	Form ____ Questions Missed	Level
PP		
P		
1		
2		
3		
4		
5		
6		
7		
8		

ESTIMATED LEVEL: ____

GENERAL OBSERVATIONS

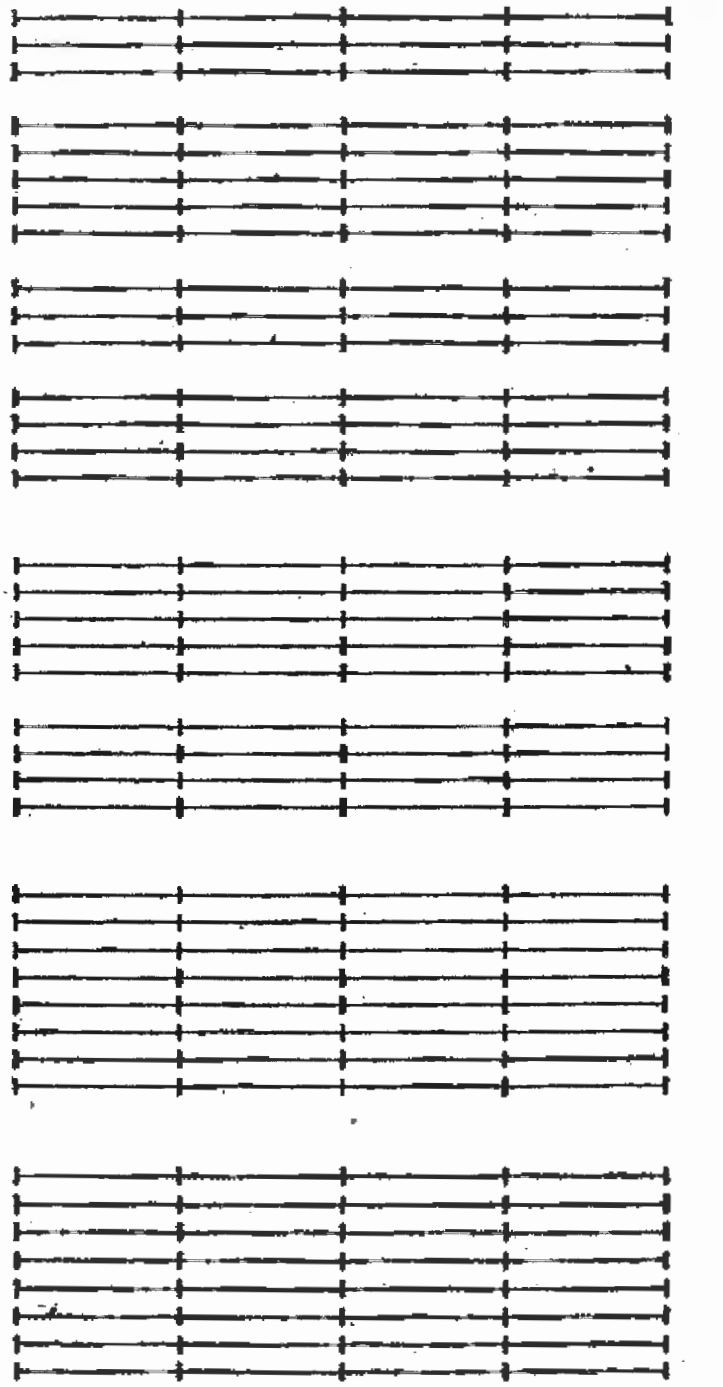
INFORMAL MISCUE ANALYSIS SUMMARY

Types of Miscues	Frequency of Occurrence: Seldom	Sometimes	Frequently	General Impact of Miscues on Meaning: No Change	Little Change	Much Change
Substitutions						
Insertions						
Omissions						

QUALITATIVE ANALYSIS OF BASIC READING INVENTORY INSIGHTS

General Directions: Note the degree to which the student shows behavior or evidence in the following areas. Space is provided for additional items.

	Seldom Weak Poor	Always Strong Excellent
COMPREHENSION		
Seeks to construct meaning		
Makes predictions		
Activates background knowledge		
Possesses appropriate concepts and vocabulary		
Monitors reading		
Varies reading rate as needed		
Understands topic and major ideas		
Remembers facts or details		
Makes and supports appropriate inferences		
Evaluates ideas from passages		
Understands vocabulary used		
Provides appropriate definitions of words		
Engagement with passages		
_____		
_____		
WORD IDENTIFICATION		
Possesses numerous strategies		
Uses strategies flexibly		
Uses graphophonic information		
Uses semantic information		
Uses syntactic information		
Knows basic sight words automatically		
Possesses sight vocabulary		
_____		
_____		
ORAL AND SILENT READING		
Reads fluently		
Reads with expression		
Attends to punctuation		
Keeps place while reading		
Appropriate rate		
Reads silently without vocalization		
_____		
_____		
ATTITUDE AND CONFIDENCE		
Enjoys reading		
Demonstrates willingness to risk		
Possesses positive self-concept		
Chooses to read		
Regards himself/herself as a reader		
Exhibits persistence		
_____		
_____		



EYES ON TRACK CLUE SHEET

Symptoms of Poor Vision Perception

Observe Student in the Classroom and Check Appropriate Box

Student's Name: _____ Date of Observations: _____

Performance Symptoms:

- ❑ Letter reversals (b,d,q,p)
- ❑ Number reversals
- ❑ Repeatedly confuses right/left direction
- ❑ Word reversals (saw/was; on/no)
- ❑ Grips pencil too tightly/poor grip (thumb crossed over fingers)
- ❑ Poor handwriting
- ❑ Poor spacing when writing
- ❑ Uses other hand as "spacer" to control spacing when writing
- ❑ Writes uphill or downhill
- ❑ Orients drawings/writing poorly on page
- ❑ Poor shape recognition/difficulty copying shapes
- ❑ Confuses similar words
- ❑ Failure to recognize same word in next sentence
- ❑ Poor visualization/spells words based on sounds only
- ❑ Poor comprehension/unable to describe what has been read
- ❑ Difficulty with sports/poor motor skills
- ❑ FRUSTRATION WITH SCHOOL WORK

EYES ON TRACK CLUE SHEET

Symptoms of Poor Eye Tracking Skills

Observe Student in the Classroom and Check Appropriate Box

Student's Name: _____ Date of Observations: _____

Performance Symptoms:

- ❑ Avoids near-point work
- ❑ Poor posture while reading
- ❑ Head tilting when reading or writing
- ❑ Holds book too close to eyes
- ❑ Homework requiring reading takes a long time
- ❑ Poor attention during work period
- ❑ Loses place when reading
- ❑ Uses a marker to keep place
- ❑ Moves head when reading
- ❑ Omits, re-reads words/letters
- ❑ Re-reads lines
- ❑ Repeats letters within words
- ❑ Reads big words, but misreads/misses smaller words (and, but, if...)
- ❑ Difficulty copying from chalkboard/loses place
- ❑ Avoids reading out loud
- ❑ Enjoys being read to/avoids self-reading
- ❑ Whispers to self for reinforcement when self-reading
- ❑ Poor reading comprehension
- ❑ Comprehension declines as reading continues
- ❑ Misaligns numbers in math
- ❑ Does not look directly into speaker's eyes
- ❑ EASILY DISTRACTED

EYES ON TRACK CLUE SHEET

Social Observations and Labels Associated with Poor Eye Tracking and Vision Perception Skills

Social Observations:

- ❑ Attention span very short
- ❑ Low self-esteem
- ❑ Easily distracted
- ❑ Temper tantrums
- ❑ Frequently the class clown
- ❑ Extremely shy child
- ❑ Frequent crying when tasks appear hard
- ❑ Day dreaming (inattentive)
- ❑ Poor self-image
- ❑ Frustration/angry emotions are quick to surface
- ❑ Behavior often inappropriate for situation
- ❑ Irritability
- ❑ Clumsy on playground (poor physical coordination)
- ❑ Difficulty with sports/poor motor coordination
- ❑ Student frequently appears confused
- ❑ Mixed dominance
- ❑ Lack of hand preference
- ❑ Developmental lags

Labels:

- ❑ Lazy
- ❑ Slow learner
- ❑ Dyslexia
- ❑ Juvenile delinquent
- ❑ Attention Deficit disorder
- ❑ Working below potential
- ❑ Immature
- ❑ "At Risk"
- ❑ Behavior problem
- ❑ Learning disabled